ENGINEERING NEWS-RECORD

Curtain-wall innovation—double core *p. 40*

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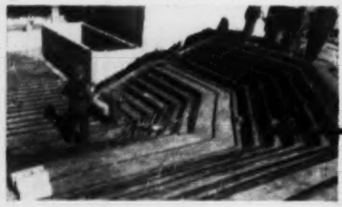
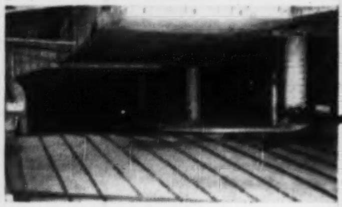
...another WROUGHT IRON PIPE snow melting system

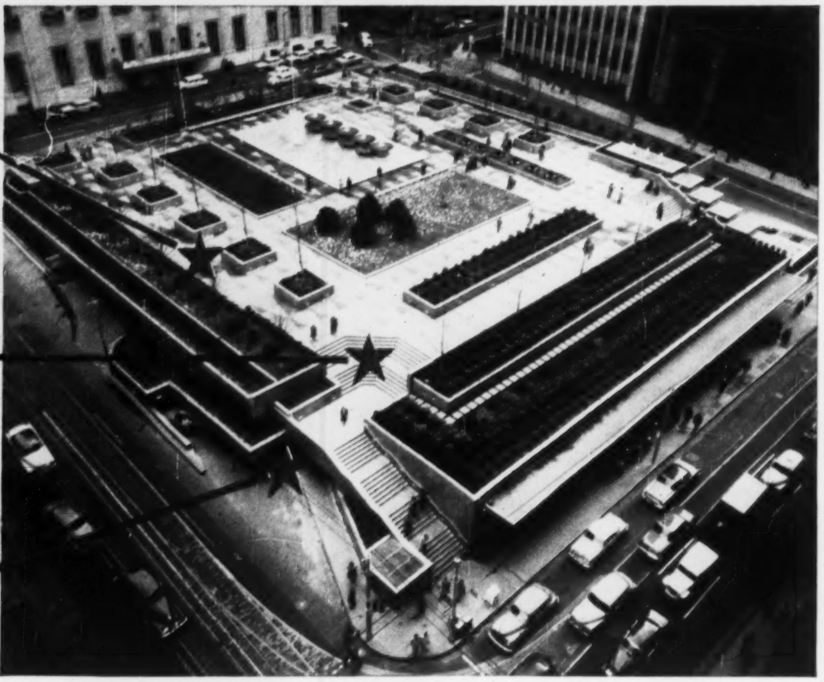
● Wrought iron pipe grids installed in park paths



● Wrought iron pipe serving step snow melting system



● Wrought iron pipe in garage access ramp system



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Our bulletin, *Wrought Iron Pipe for Snow Melting Systems*, gives complete information. Write for a copy.

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construction of the park.

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HARRY DOUGHERTY & SONS,
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park snow melting contract.

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garage snow melting system.

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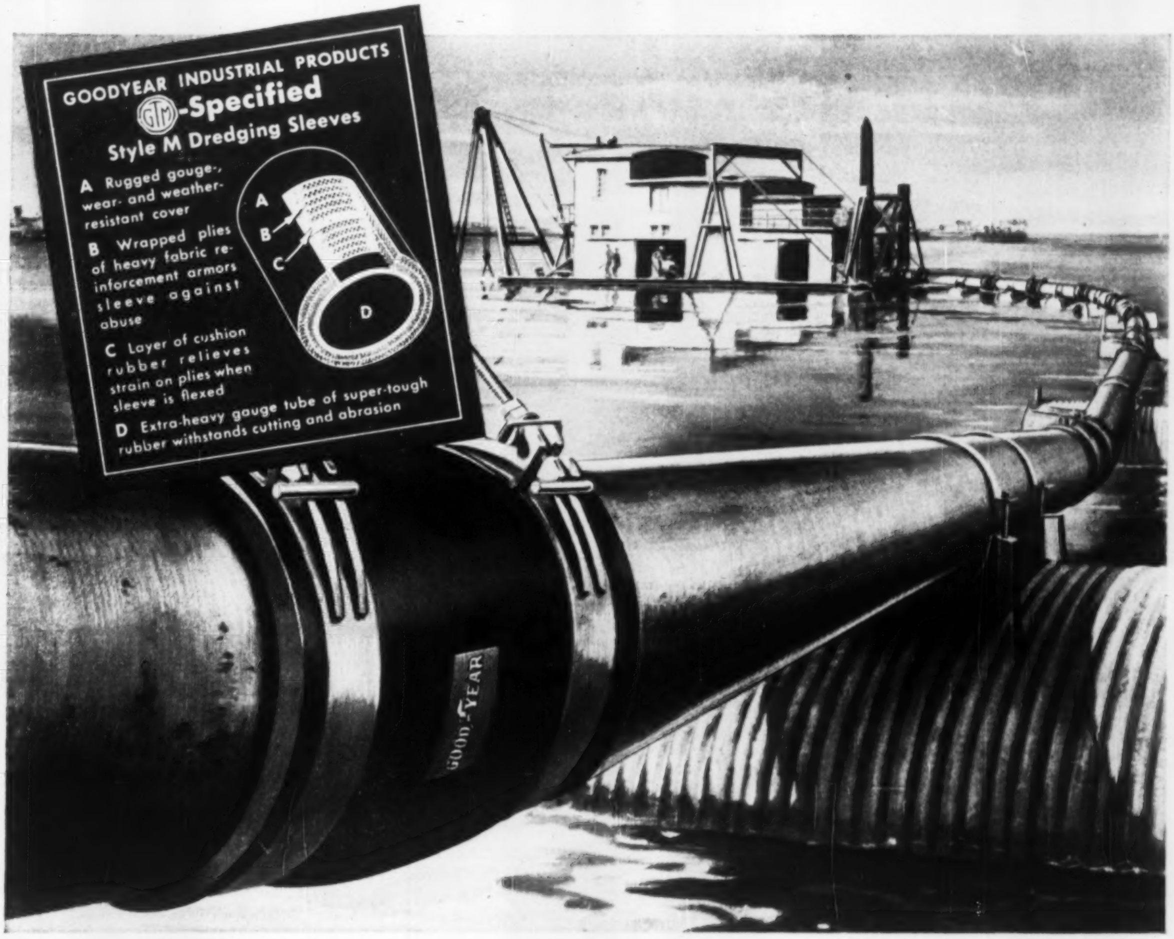
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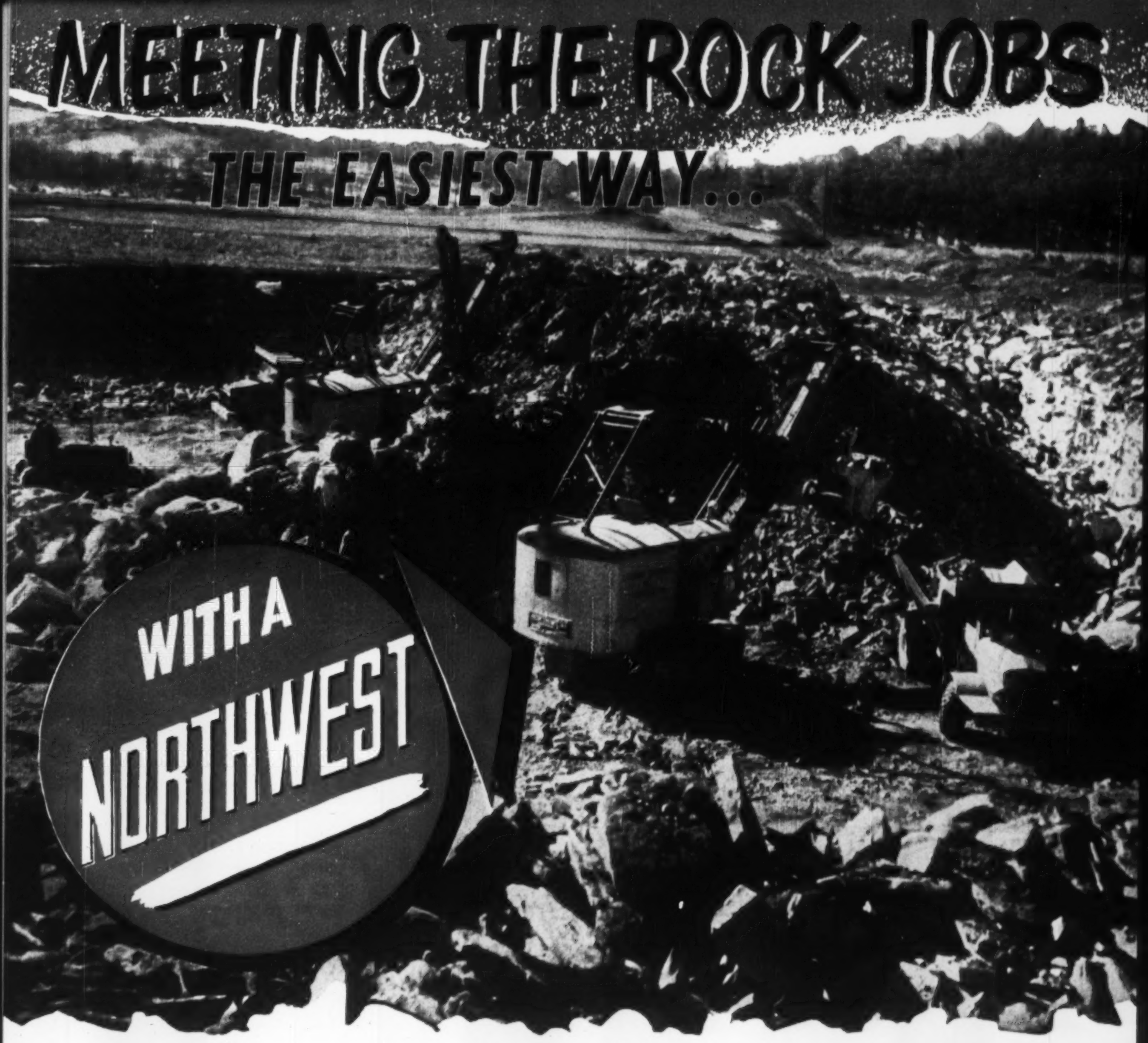
Robert F. Boger
Publisher

January 12, 1956 — ENGINEERING
Vol. 156, No. 2 — NEWS-RECORD

Published weekly by McGraw-Hill Publishing Company, James H. McGraw (1860-1948), Founder. **Executive, Editorial, Advertising and Subscription Offices, McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y.** Publication Office, 99-129 North Broadway, Albany 1, N. Y. Donald C. McGraw, President; Paul Montgomery, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Joseph H. Allen, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Circulation Director. **SUBSCRIPTIONS:** Address correspondence to Engineering News-Record—Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address. Subscriptions are solicited only from persons with an identifiable commercial or professional interest in construction and building. **Position and company connection must be indicated on subscription orders.** Single copies 35¢. Subscription rates—United States and possessions, $6.00 a year; $9.00 for two years; $12.00 for three years. Canada $8.00 a year; $12.00 for two years; $16.00 for three years. Other Western Hemisphere and the Philippines, $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries $20.00 a year; $30.00 for two years; $40.00 for three years. Second class mail privileges authorized at Albany, New York. Printed in U. S. A. Copyright 1956 by McGraw-Hill Publishing Co., Inc. All Rights Reserved.



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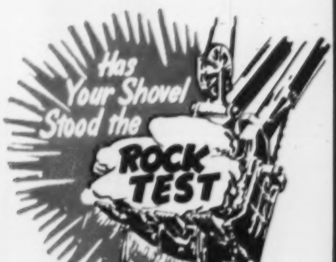

CARBIDE INSERT? or MULTI-USE?

LOCATION: Palisades Interstate Parkway, Alpine, New Jersey.

OPERATION CONDITIONS: Drilling 32-foot holes in abrasive trap rock and bluestone.

D. Cutrupi & Sons Inc., Fort Lee, New Jersey, speed deep-hole drilling on N. J. parkway job with TIMKEN® carbide insert bits

TO blast a 35-foot cut for the Palisades Interstate Parkway, D. Cutrupi & Sons Inc., New Jersey contractors, had to drill 32-foot holes through tough, abrasive trap rock and bluestone.

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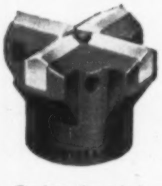

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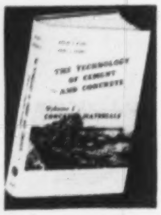

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Reader Comment

Highway Tax Diversion

SIR—The editorial ENR Nov. 3, 1955 (p. 112) entitled, "What Is Diversion of Highway Taxes?" unfortunately gives currency to what in my opinion is a misleading and fallacious piece of bookkeeping. In the editorial, you appear to give approval to the contention of the various New York officials that there is no diversion of state highway use taxes, if such amount is equalled or exceeded by highway expenditures by *all levels of government* (state, city and rural units).

The basic issue is whether motor vehicle owners and operators should be charged 100 percent of all highway expenditures by all levels of government. Such a contention is supportable only if the motor vehicle owner is the sole beneficiary of highways. To my knowledge, no reputable highway finance study (as well as those inspired by the railroads) has made such a contention. Every reputable study, before and after the Eastman study, "Public Aids to Transportation," has found that there are other beneficiaries of highways in addition to the motor vehicle owner, and that in varying degrees such other beneficiaries should make their fair contribution to highway costs.

Even the Griffenhagen report in New York (which was unacceptable to highway users because of many of its procedures and conclusions) stated, "Almost every important study made on the subject of highway transportation and finance in modern times has recognized that benefits accrue to the non-user groups as well as to the highway users. . . Property owners benefit from highways, since property values are generally enhanced by the development of adjacent or nearby highways, and since real property has relatively little value unless a means of access is provided. . . Although individuals may be neither highway users nor real property owners, they derive benefits from highways as part of the general public. The performance of almost every governmental service—federal, state and local—depends, to some extent, upon the existence of highway transportation facilities."

In addition to the general taxes which the motor vehicle owner pays like every other citizen, he makes his special contribution to highways through payment of highway use taxes (motor fuel, motor vehicle license or registration, etc). These taxes were initiated on the assumption they would be used for highway purposes, and have been generally accepted so long as faith was kept with the motor vehicle owner.

While it is appreciated that dedication of taxes is not loved by the academicians, these highway use taxes and their protection through dedication to highway purposes have made possible our present modern highway system. The assurance of funds which is only feasible through dedication is essential to the greatly needed long range planning of our highway departments.

While academically it can be argued that "the mere placing of motor-vehicle taxes in a state's general fund does not classify as diversion . . .", sad experience in the few states using this devices indicates that this is the easiest way to lose track of highway tax monies and to encourage diversion.

And, apparently, the people in New York thought so in rejecting the proposed bond issue.

YULE FISHER
Research Counsel,
National Highway Users Conference, Inc.,
Washington, D. C.

[Editor's Note: Mr. Fisher also states that "the basic issue is whether motor vehicle owners and operators should be charged 100% of all highway expenditures by all levels of government." No such contention was made in the editorial, and it would seem quite the opposite issue is posed in New York's case, for the money from its general funds that goes to highways, directly or indirectly, comes from all kinds of taxes paid by all kinds of people. As New York authorities claim, New York highway users paid in only $2.4 billion in highway taxes during the past 25 years but "all levels of government" spent $5.3 billion on roads in the same period. Apparently, some kind of taxes different from user taxes supplied the extra $2.9 billions spent on roads.

The editorial agreed with Mr. Fisher that general fund handling of

(*Continued on page 10*)

Engineering News-Record welcomes expression of opinion from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance.

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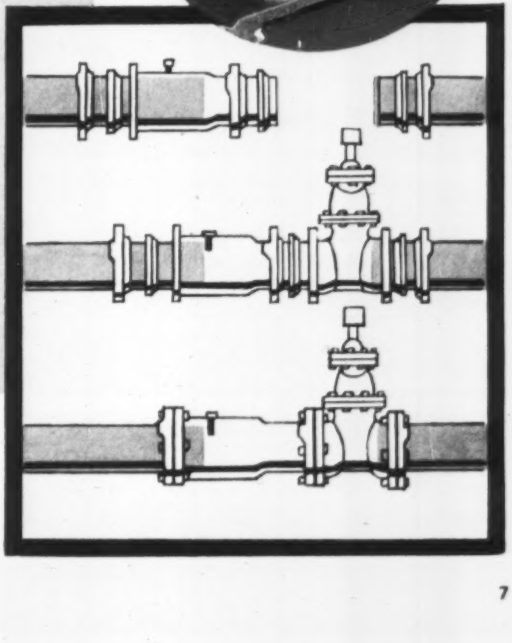

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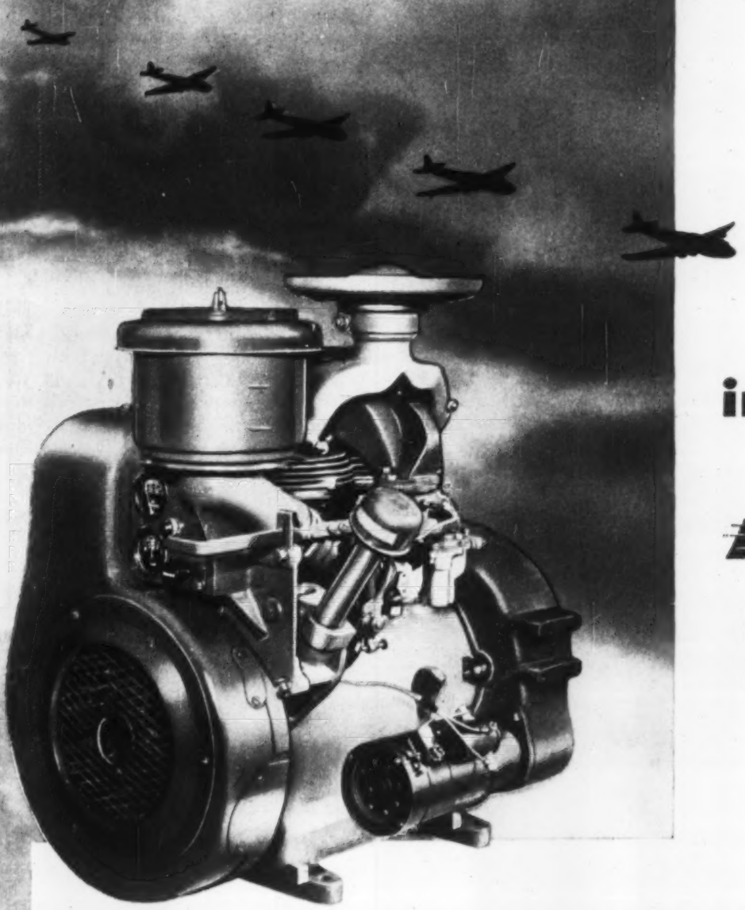

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user taxes has its dangers by suggesting that anti-diversion amendments are desirable "to check a tendency to carry such taxes to unfair and unreasonable levels." But its principal concern was with a definition of diversion, and there would not seem to be any diversion if more is spent on roads than is collected with highway user taxes.]

Flat Jacks for Prestressing

Sir—In your very good article (ENR Oct. 27, 1955, p. 34) concerned with the new hangars and the prestressed taxiway at Paris 'Orly Airfield, one error has slipped into page 36, third column, third line from the bottom: the jacks were not inflated with water (which would not have ensured a lasting stability) but with Colgrout, a mixture of water, fine sand and portland cement. The corresponding sentence should read as follows:

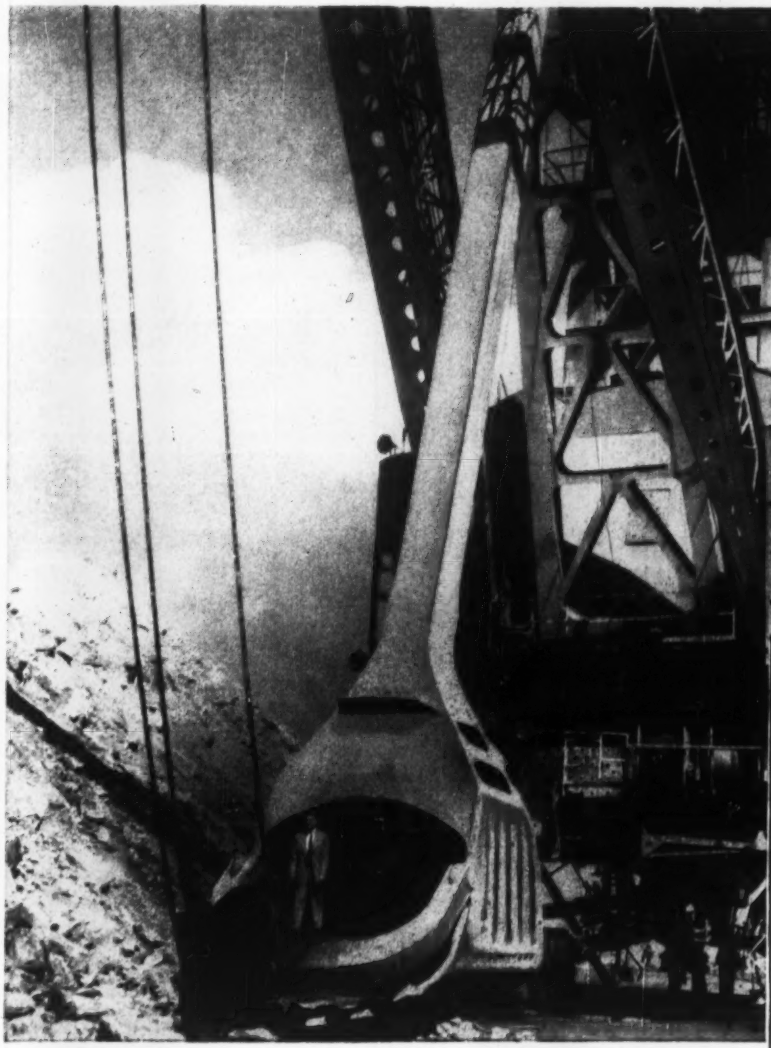
"One of the jacks in each joint was inflated with Colgrout, a mixture of water, fine sand and portland cement, thus compressing the pavement slab between abutments constructed at either end. The two other jacks of the joints remain empty, in case additional compression would appear necessary later on."

Pierre D. Cot
Directeur General
de l'Aeroport de Paris
Paris, France

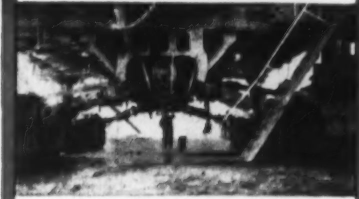
What Did Cause Failures?

Sir—I have followed with great interest your report and comments on the failure of the reinforced concrete rigid frames of the Air Force warehouses (ENR Aug. 25, p. 23; Nov. 10, p. 21; Nov. 17, p. 120) and hope that a more complete description of the structure with details of design will be forthcoming. I hope that when the final report of Ammann & Whitney is available you will publish at least a summary and that there will be included enough details on the design and construction so that competent structural engineers may be able to form their own opinions of the cause of failure.

I have, for a long time, felt that the American Concrete Institute requirements for diagonal-tension reinforcement are not sufficiently conservative, especially when shearing stresses are high. In regard to bond, I have no basis for an independent opinion since resistance to bond stresses can be determined only by tests. However, it is very doubtful that the use of the maximum stresses



The Big Dipper is an apt title for this 50-yard bucket. Part of the world's largest shovel, it will soon lose its claim to fame when its coal-mining owner builds an even larger one.



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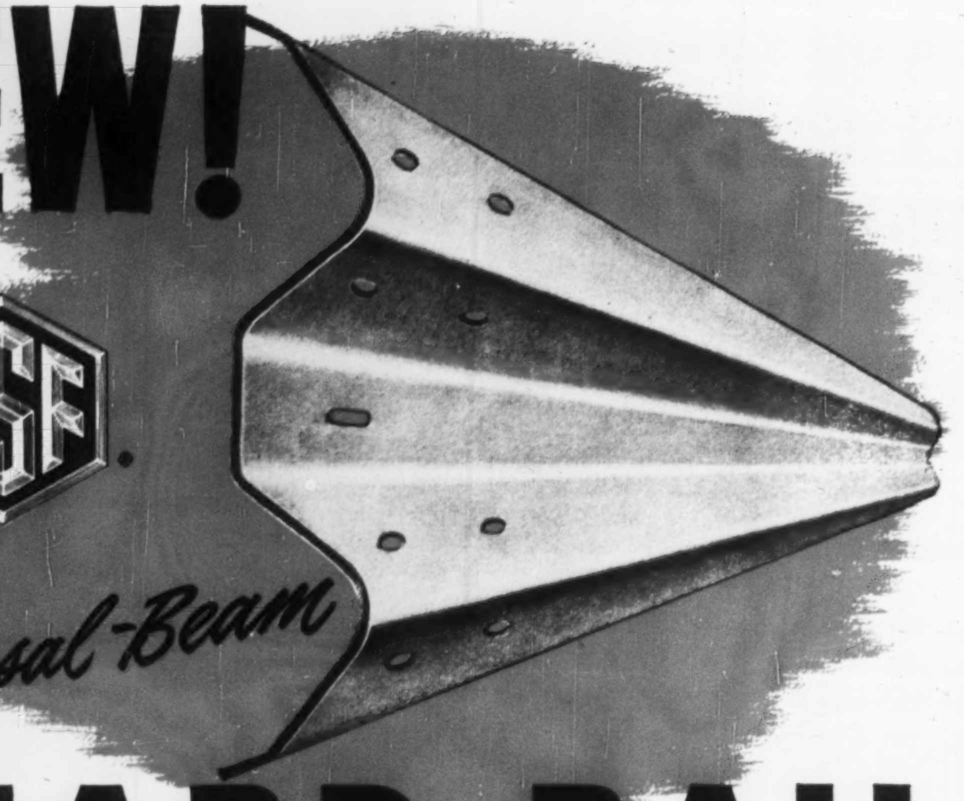

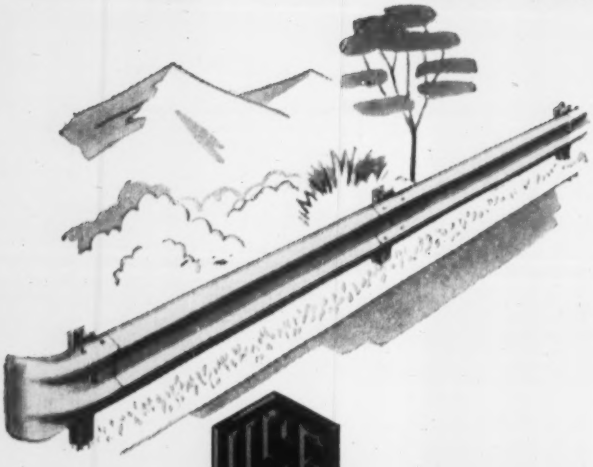

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permitted by the ACI code could alone account for these failures. There must have been some other errors in design or construction, which at least contributed to the collapse.

It is reported that the failure occurred under dead load only. A reinforced concrete structure should be able to withstand a total test load of at least 1½ times the dead load plus twice the assumed live load without sign of distress or failure. If the design live load is only one third of the dead load, this would mean a total test load of about 2.2 times the dead load alone.

Since the rigid frames in question failed under dead load only, and should not have failed under a load of over twice this load, it follows that the critical stresses at failure were 2½ to 3 times what they should have been under the load then existing. It is hardly possible that any of the stresses permitted by the present ACI code are that far on the unsafe side. Therefore, it would seem that although some of the ACI code requirements may not be conservative enough, some other cause must have at least contributed to the failure of these rigid frames.

C. S. Bumann
Consulting Engineer
Springfield, Mo.

[Editor's Note—A summary of the final report of the investigation appears on p. 21 of this issue.]

Welding Designs

Sir—Headlines of the type, "Welding Stresses Crack Penstocks" (ENR Nov. 3, 1955, p. 32) gives the wrong impression. They are not wholly factual. From what I am able to determine from this article, it would seem that this failure may be attributed to poor welding design rather than welding stresses.

Unfortunately, not enough engineers in the country are familiar with the problems of welding design. Nor are they sufficiently skilled in understanding welding stresses to recommend a welding sequence that would practically eliminate all stresses that might develop in such a structure.

Another interesting sidelight to this failure might be the steel involved. Some 15 welded ships failed during the war period, and immediately everybody said that all welded ships had failed. However, it wasn't the welding that failed, it was the steel. A similar notch sensitive type of steel may have been used in these penstocks. From all indications there were a lot of "de-

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signed-in notches" in the penstock at points of high stress concentration. Naturally, such a situation could lead only to failure.

It would not be surprising to me if the same brittle fracture condition that caused the original break might not again occur in the repair. I do not believe the repair design outlined will eliminate the brittle fracture condition brought about by poor welding design.

Let's not make welding the whipping boy for all the problems that come along where welding is used. Engineers have a lot to learn about welding design, and it is time they were starting. They might also watch the steel they select for welding applications.

T. B. JEFFERSON
Publisher
Welding Engineer

Engineer Left Out

Through a regrettable oversight in the article on the new Harlem River bridges of the New York Central Railroad (ENR Dec. 22, 1955, p.24), the name of the consulting engineers, Hardesty & Hanover, of New York, was omitted. This firm was instrumental in the design of the lift span, its towers and machinery, working closely with the railroad's engineering staff from the inception to the completion of the project.

CALENDAR

American Road Builders' Association, annual convention, Miami Beach Auditorium, Miami Beach, Fla., Jan. 11-14.

Highway Research Board, annual meeting, Sheraton-Park Hotel, Washington, D. C., Jan. 17-20.

American Society of Heating and Air-Conditioning Engineers, annual meeting, Sheraton-Gibson Hotel, Cincinnati, O., Jan. 23-25.

National Association of Home Builders, annual convention-exposition, Conrad Hilton and Sherman Hotels, and the Coliseum, Chicago, Ill., Jan. 22-26.

Engineers Joint Council, general assembly, Hotel Statler, New York, N. Y., Jan. 26-27.

Associated Equipment Distributors, annual meeting, Conrad Hilton Hotel, Chicago, Ill., Jan. 29-Feb. 2.

Society of American Military Engineers, annual technical meeting, Palmer House, Chicago, Ill., Feb. 9-10.

Association of Asphalt Paving Technologists, annual meeting, Hotel Cleveland, Cleveland, O., Feb. 13-15.

Associated General Contractors of America, national convention, Waldorf-Astoria Hotel, New York, N. Y., Feb. 13-16.

American Society of Civil Engineers, national winter convention, Baker Hotel, Dallas, Texas, Feb. 13-17.

American Concrete Institute, annual convention, Bellevue-Stratford Hotel, Philadelphia, Pa., Feb. 20-23.

American Concrete Pipe Association, annual convention, Broadmoor Hotel, Colorado Springs, Colo., March 6-10.

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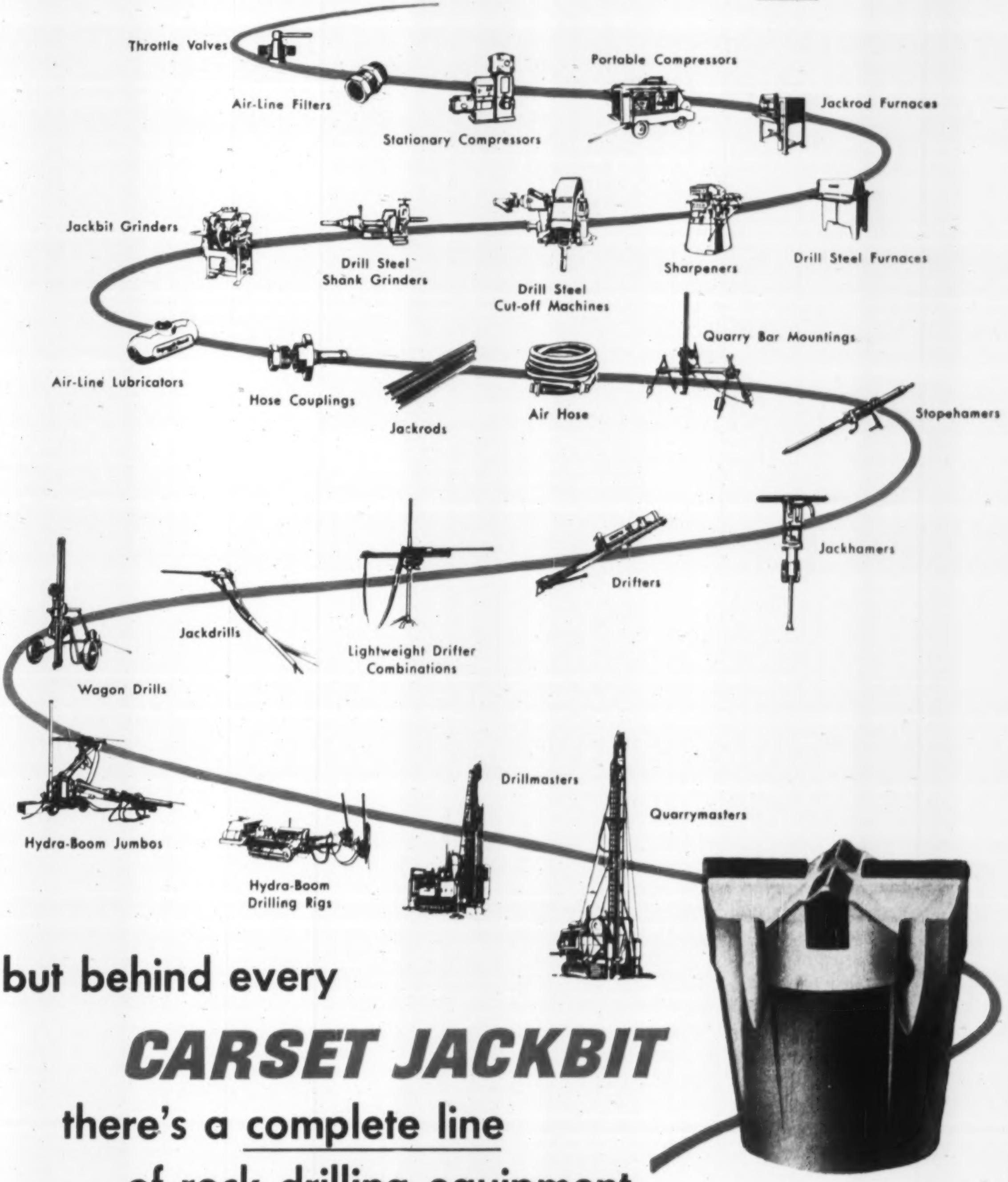
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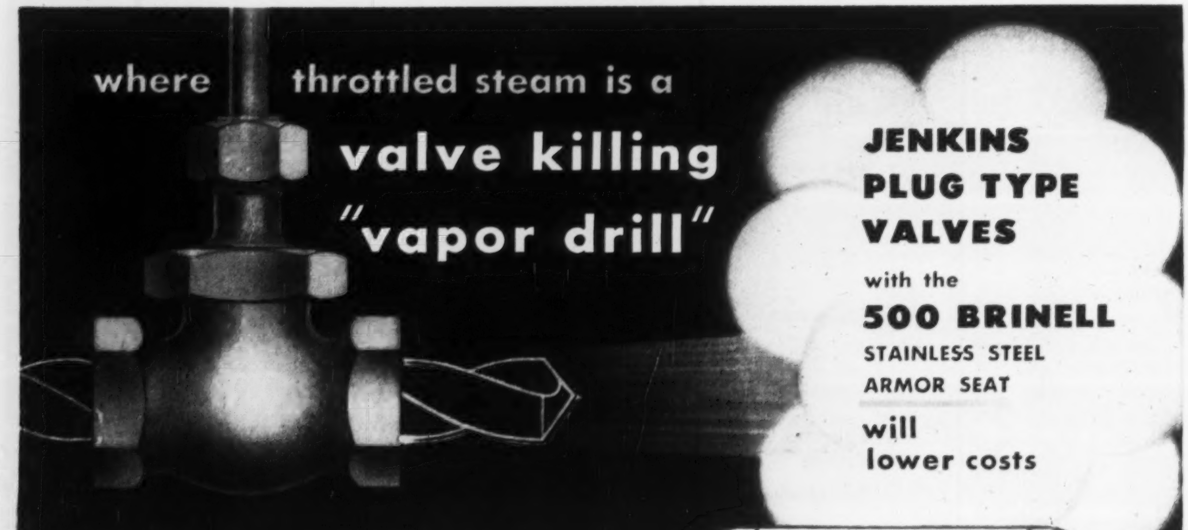

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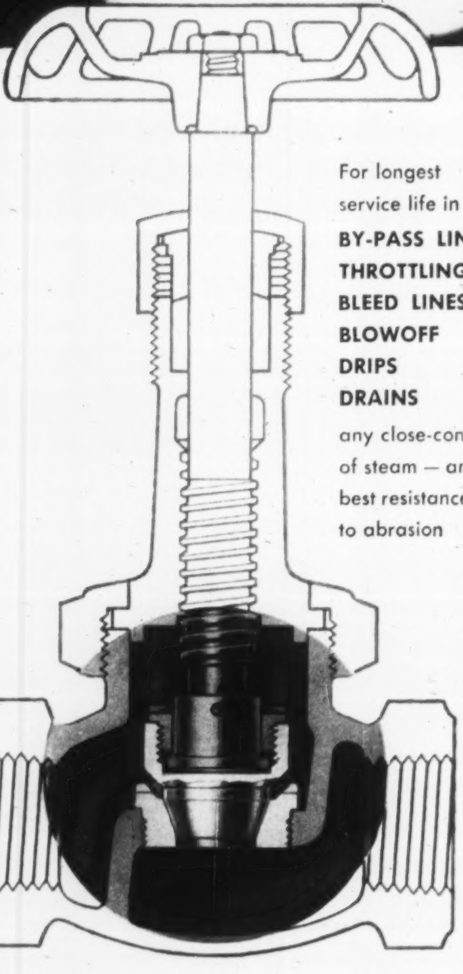

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Vol. 156, No. 2 January 12, 1956

Number of copies printed this issue, 71,259

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THE CONSTRUCTION WEEK

A GOOD START—In step with the traditional promise of a new year, labor and management last week moved hopefully—and experimentally-forward on several fronts.

In New Jersey, the construction industry set up machinery designed to correct and eliminate such costly practices as work stoppages, featherbedding and jurisdictional disputes (page 87). The plumbing industry in Greater New York City launched its first area-wide agreement in its continuing search for stability and steadier employment (page 88).

Meanwhile, the long and costly teamsters' strike that has crippled Southern California's construction industry for the last three months ended in a settlement agreement (page 84), sending the controversial issues to arbitration.

BUILDING UP A BOOM—After roaring along like a prarie fire in early '55, commercial building contracts began to fizzle out in the latter part of the year. Now there's a good chance that this category of construction is ready to get hot again. For three months, new work has been flowing into the backlog of proposed projects at a fast clip, building up pressure for a new boom in commercial building. And, it may start soon (page 81).

CITY MAY GO "UP"—Los Angeles, Calif., is considering an upward revision of its long-standing height limit—from 150 ft (13 stories) to 250 ft (22 stories). The 13-story limit was originally imposed for control of structural hazards arising from earthquakes. It's pretty generally felt that present-day engineering has outdated the old limit. San Francisco with comparable earthquake hazard now has a 290-ft top.

LANDSLIDES AND EARTHQUAKES—Shaving off mountainsides to accommodate man's modern engineering structures is always tricky business and particularly so where nature's caprices tend toward violence as in the countries of some of our Latin American neighbors. Thus, in Venezuela they are still working on clearing a landslide that occurred Dec. 15, blocking one of the cuts on the new expressway that connects Caracas with its seaport and airfield. Heavy rains and a "slight" earthquake brought some 30,000 cu yd of material onto a 500-ft length of the roadway. Hastily built detour roads get traffic around the slide area. In Caracas itself the same rains endangered some of the towers of the new teleferique that was dedicated Dec. 11, and remedial measures are now under way. In the meantime at Acapulco, Mexico, last week, an earthquake did considerable damage, and issued the same kind of warning for some of the new buildings which have been boldly located on spectacular cliffs overlooking the harbor in this resort town.

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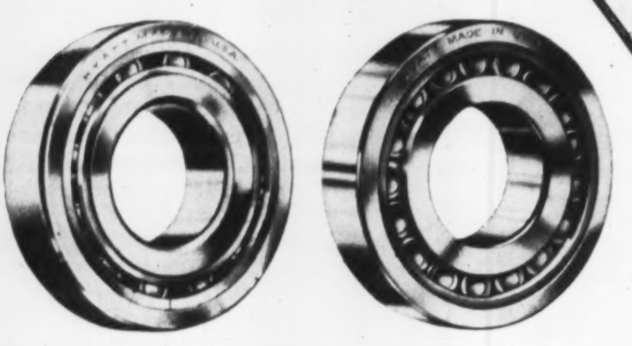

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WASHINGTON OBSERVER

Eisenhower goes down the line for construction programs in his election-year messages now going to Congress. Next week's budget message—which puts the dollar sign on the programs—is foreshadowed in last week's State of the Union Message which laid down the philosophy the Republicans will take into the election campaigning.

Construction spending will stay high whether Eisenhower runs or not. The messages put the party sufficiently on the record, regardless of who the candidate may be. The Eisenhower policy is swinging more toward bigger government programs, instead of budget cutting.

•

Military construction will stay big. That was obvious even before the President gave his views to Congress on the outlook for peace or war during the year ahead. Some weeks back, the Administration decided that military spending would have to go up—a sure sign that programs to offset the Soviet threat will stay high or go higher. This is true for construction programs.

The President will ask for 35,000 public housing units for the year beginning July 1 and another 35,000 for the year after that. The President does not recommend special public housing for the aged, but amendments to the housing law to assist private industry to meet the needs of older people.

The Administration wants more authority for Fanny Mae to buy mortgages direct at the President's order. **Eisenhower ties in with "operation home improvement"** by asking that terms on home improvement loans be liberalized from the present maximums of $2,500 for three years.

•

The President had no new suggestions on how to get his highway program. He reiterated that "there must be an adequate plan of financing." But he did promise highways will be dealt with specially later on, perhaps in his economic message later this month. He emphasized again that he wants the 40,000-mile interstate network to be authorized and handled as one big project to be completed in about 10 years.

A comprehensive water conservation program will be submitted to Congress, the President said. This will lay down an Administration policy toward future development of water power, irrigation reclamation, pollution, flood control and navigation—something no administration has ever tried before. **The President specifically backed the big Upper Colorado project,** the Frying-Pan Arkansas diversion project and the John Day partnership dam.

•

The Administration is behind a $1.25-billion school grant program—$250-million per year for five years to be matched by local funds. The big threat to approval in Congress is the integration issue, which is certain to be brought up. A bill for $400 million per year is already approved by the House Education and Labor Committee.

A new program of grants to medical schools and medical research institutions for new facilities, will be sent to Congress later.

New recommendations on a bigger post office construction program will be sent to Congress, Eisenhower said. This would be an added boost to existing authority under lease-purchase and straight lease which Post Office officials say is enough to get the buildings they need.

Eisenhower didn't mention new flood-control dams as had been expected in view of the California and New England disasters. But the Administration will ask money for projects in these areas. Democrats are already in with a bill giving the Army Engineers power to begin priority projects, in the Northeast, even those not authorized specially by Congress. This could be expanded of course, to bring in needs in other areas.

At the Denver water dam one hose takes the place of many...

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(1) U. S. Royal Cord Air Hose not only handles air—but also *water—and water under the extreme pressures required in washdown.* He used the hose on vibrators to consolidate the concrete—he used it as part of cooling lines on face of dam—on pneumatic tools, on sump pumps and sludge pumps, rock drills, chipping hammers, air wrenches.

(2) The contractor found there was no need to go easy on U. S. Royal Cord. *No* need for cribbing, no time wasted by workers in selecting or storing special hose for special jobs. *No money tied up in stocking specialized hose.*

(3) Valuable pay hours saved—hour after hour, week after week. U. S. Royal Cord is *built like a tire*—that's why it can be kicked around and abused and made to do jobs you don't expect from an air hose.

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ENGINEERING
NEWS-RECORD

Investigators report concrete rigid-frame failures in Air Force warehouses could have been caused by:

- **Faulty design assumptions.**
- **Over-estimation of tensile strength of concrete.**
- **"Frozen" expansion joints.**
- **Volumetric changes.**

Warehouse Failures Pinpointed

Consultants to the Corps of Engineers report that failures of reinforced concrete rigid frames in recently built Air Force warehouses could have been caused by a combination of conditions, none of such character as to be the sole cause.

The report, prepared by Ammann & Whitney, consulting engineers, New York City, expressed the opinion, however, that construction materials and methods could not have caused the trouble, and that the plans for the warehouses would have been acceptable to city building departments.

The investigation on which the report is based was sparked by collapse on Aug. 17, 1955, of one span of a rigid-frame warehouse at Wilkins Air Force Base, Shelby, Ohio (ENR Aug. 25, 1955, p. 23). Examination of similar warehouses in other areas showed that cracking of the same nature, but with various degrees of severity and extent, was present in most cases.

• Standardized design—The warehouses were built in accordance with a standard design prepared by L. P. Kooken & Co., architects-engineers, Baltimore, and adapted for different sites by other engineers. The Corps of Engineers has warehouses of the same design completed or under construction at 20 locations.

In general, the rigid-frame bents are spaced 33 ft c-c and support beams at 8 ft intervals. They have a total length of 400 ft, composed of six bays, with an expansion joint near midlength (p. 22). Made of structural steel, the bearing at the joint consists of a flat steel plate on which rests a curved steel plate. In some cases, the plates were tack-welded together during construction.

• Why frames cracked—A preliminary report stated that serious cracks opened, during construction or up to about two years later, in regions of low bending moment near inflection points in the bents (ENR Nov. 10, 1955, p 21). That report also absolved construction methods and materials of the blame for the distress observed.

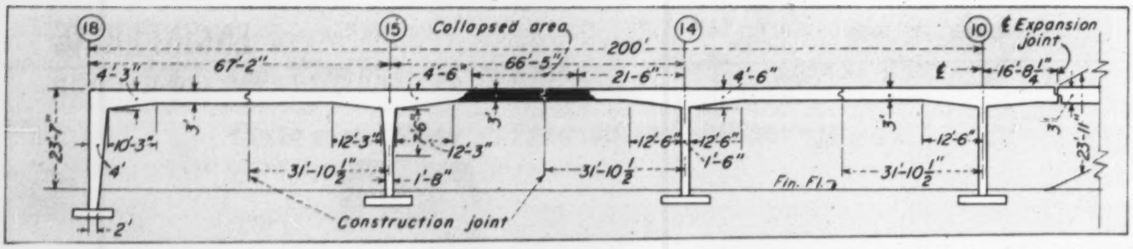
According to the latest report, the overstress could occur only if the design assumptions and detailing did not anticipate either the magnitude or distribution of the actual stresses—or if the tensile strength of concrete members is not as great as indicated by flexure test of plain concrete beams or shear tests of reinforced concrete beams. All these conditions, the consultants say, influenced the behavior of the frames at Wilkins AFB.

Add the effect of a high ratio of dead load to live load (4:1)—and consequent lower safety factor against working load—and there is sufficient reason for the difficulties experienced, Ammann & Whitney conclude.

• "Frozen" joint a factor—"One of the sources of difficulty," the report points out, "was the assumption that the expansion joint detail at the center of the building would allow relatively free motion of the frames with respect to the stiff outside frame legs, thereby releasing stresses caused by volumetric changes. Examination of joints in the finished buildings indicated, by the concrete around the joint, and by signs of reversal of stress at the outer frame legs, that motion around the joint was restricted. . . .

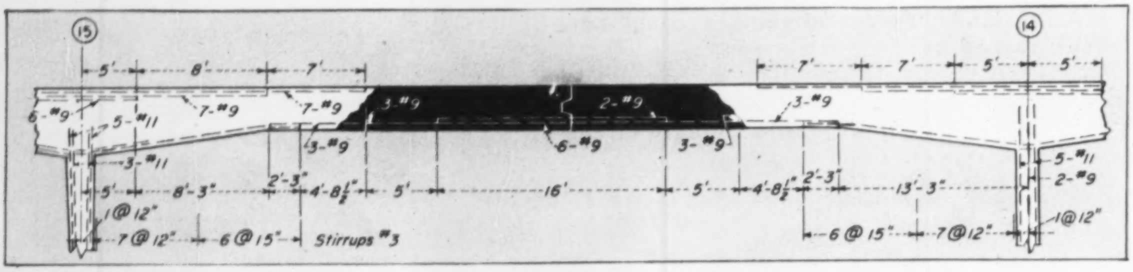
"If the joint was restrained, appreciable tensile stresses would be developed by the volumetric changes occurring in the drying and cooling of the relatively large, heavy rectangular members. These stresses were not calculated as being sufficient in themselves to cause failure, but they could have contributed materially to the overstressed conditions of the member."

• Volume changes involved—"The investigation further showed," the report continues, "that design methods used did not account for certain redistributions of moment likely to be caused by volumetric changes. It appears quite probable that haunched members may be restrained by shape



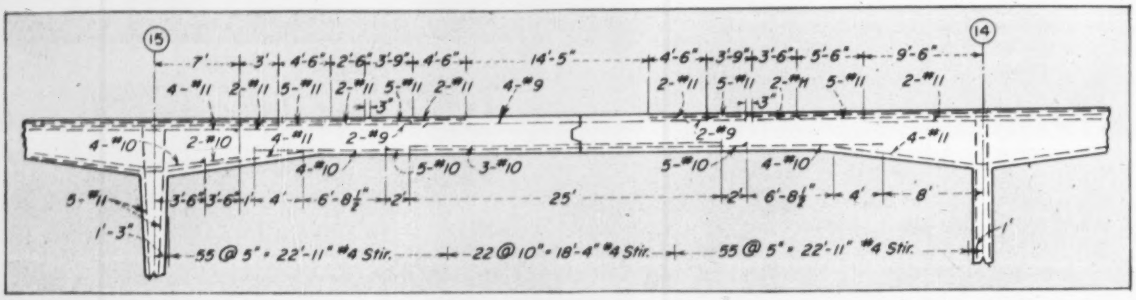
18
15
Collapsed area
14
10
℄ Expansion joint
200'
67'-2"
4'-3"
4'-6"
66'-5½"
21'-6"
4'-6"
℄
16'-8¼"
23'-7"
10'-3"
3'
12'-3"
12'-3"
12'-6"
12'-6"
12'-6"
3'
4'
31'-10½"
1'-8"
31'-10½"
1'-6"
Fin. Fl.
31'-10½"
23'-11"
2'
Construction joint

CONCRETE FRAME at Wilkins Air Force Base failed in one span last August. "Frozen" expansion joint may have been a factor.



15
14
5'
8'
7'
7'
7'
5'
5'
6-#9
5-#11
7-#9
7-#9
3-#9
2-#9
3-#9
3-#11
3-#9
6-#9
3-#9
5-#11
2-#9
5'
8'-3"
2'-3"
4'-8½"
5'
16'
5'
4'-8½"
2'-3"
13'-3"
1@12"
7@12"
6@15"
Stirrups #3
6@15"
7@12"
1@12"

ORIGINAL DESIGN of faulty bent stopped negative steel and stirrups short of sections where cracks occurred.



15
14
7'
3'
4'-6"
2'-6"
3'-9"
4'-6"
14'-5"
4'-6"
3'-9"
3'-6"
5'-6"
9'-6"
4-#11
2-#11
5-#11
2-#11
5-#11
2-#11
4-#9
2-#11
5-#11
2-#11
5-#11
2-#11
3"
3"
4-#10
2-#10
4-#11
2-#9
2-#9
4-#11
4-#10
5-#10
3-#10
5-#10
4-#10
5-#11
3'-6"
3'-6"
1'
4'
6'-8½"
2'
25'
2'
6'-8½"
4'
8'
1'-3"
1'
55 @ 5" = 22'-11" #4 Stir.
22 @ 10" = 18'-4" #4 Stir.
55 @ 5" = 22'-11" #4 Stir.

DESIGN RECOMMENDED by investigators of the failure calls for stirrups and reinforcing steel throughout the span.

and formwork and that the moments at the haunches may pick up at a faster rate than the moments in the center of the span, where cracks must be closed before moment can be developed. Such behavior would cause a shift in the point of inflection beyond the cutoff points determined by the assumption of elastic behavior. Approximation of this effect based on known volume changes in concrete indicated that this behavior could produce appreciable tensile stresses initiating cracking in the regions where the cracks were observed. Again, the stresses so determined were not large enough to be the sole cause of the member failure.

"Both of the above conditions contributed to an overstressed condition in the frame members which could have been compensated for by increasing the length of the negative steel and by continuing some of the negative steel for the full length of the member. . . ."

Prior to the rigid-frame failure in August, the Corps of Engineers on several occasions had revised the design to include additional negative-moment steel and stirrups.

• **Delayed cracking**—The investigators call attention to the observation that cracks did not develop until a considerable time after the full deck load was in position. During this period, the buildings have never been subject to roof live loads approaching the values used in the original design (generally 20 psf). Nevertheless, new cracks are still developing and enlarging. This, they say, indicates a time effect is present and involves shrinkage, creep and, possibly, reduced strength under long-time loading conditions.

If the frames had a smaller ratio of dead to live load, they would have a larger safety factor, the consultants believe. Hence, cracking should be less severe in warehouses designed for a 40-psf roof load than for the 20-psf design. This is confirmed by preliminary reports on a warehouse at Griffiss Air Force Base, N. Y., designed for the heavier load.

The consultants also call attention to the fact that roof slabs in these warehouses are not integral with the girders. They believe monolithic slabs would have given the frames greater strength.

• **Code provisions faulty**—The report further states that there is reason to believe that the design criteria for shear in current building codes is inadequate. Also, strength of concrete in diagonal tension in full-scale beams is much lower in the vicinity of the point of contraflexure than anticipated from test specimens.

As a result, the American Concrete Institute is considering a revision of its building code requirements (Sect. 801d). The proposed revision calls for web reinforcement, when the allowable shearing unit stress is exceeded, the steel to carry two-thirds of the total shear at the section or the excess over the allowable, whichever is greater. (Under present requirements, the steel has to carry only the excess.) Also, negative reinforcement and web reinforcement will have to be extended a distance of onesixteenth the span past the extreme points of inflection.'

- **Frame design revised**—The consultants recommend several changes in the rigid-frame design, principally:

1. Web reinforcement to carry the entire shear in the region of low moment without help from the concrete.
2. Self-lubricating bronze and stainless steel rocker and expansion plates for the bearings in expansion joints.
3. Additional longitudinal steel in critical areas to compensate for effects of non-uniform live load, temperature and shrinkage.
4. Two continuous No. 5 bars in each vertical face to control local cracking.

About 200 frames, it is estimated, are to be built in accordance with the revised design.

Girders in existing frames, the consultants recommend, should be strengthened by addition of external stirrups. Slightly more than 300 frames may have to be reinforced in this way.

Turnouts for Added Safety On Connecticut's Parkways

Development of 28 rest areas on Connecticut's Wilbur Cross and Merritt Parkways has been recommended as a safety measure.

The $1-million project, proposed by the State Safety Commission, would require about 2,200 ft of land for each turnout. Construction costs are estimated at $32,400 for each area. Maintenance cost is set as $6,500 yearly.

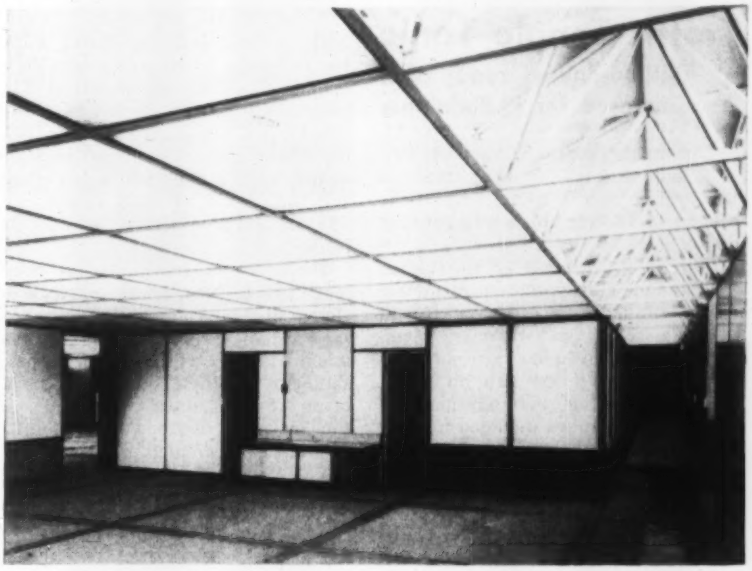
The Highway Department already has located approximately 28 sites that could be developed into turnouts. A small number will be made available as soon as possible. If these are used to advantage by motorists, others will be developed.

Meanwhile, the first major project in the modernization of the 17-year-old Merritt Parkway is under way. A 4½-mi stretch from the New York State line at Port Chester to the Lake Ave. exit in Greenwich is being overhauled at a cost of $850,000.

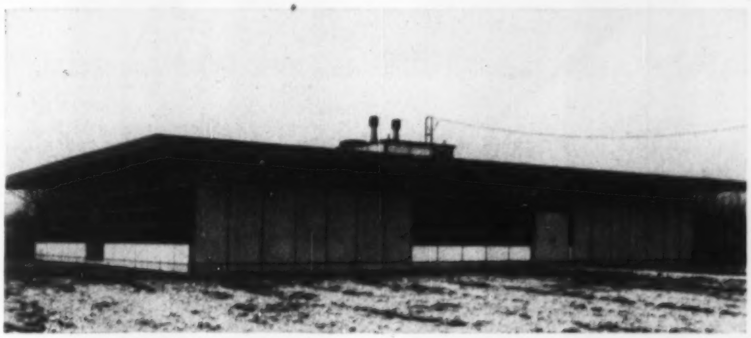
Army Engineers Act Fast In California Flood Area

Within a week after northern California's disastrous floods, the Sacramento and San Francisco districts of the Corps of Engineers had authorized some $3.7 million worth of emergency repair work, with the major share, $3 million, handled by the Sacramento district.

Projects got under way under a negotiated contract basis, rather than the regular low bidding procedure.



Space Frames Support Roof . . .



. . . For New Flexible School

An expandable low-cost school of space-frame design opened in Wayne, Mich., this week. Called the Hoover School, the 85 x 65-ft structure was built within three months at a cost of $13 per sq ft.

The basic structural frame is the "unistrut" space frame, a system of light-gage steel members bolted together. These members serve as framing for the floor, walls and roof, as well as window frames and supports for wiring conduits. One column-less area is 84 x 32 ft.

The one-story school is equipped to handle about 120 elementary-grade pupils. It is divided into five classrooms and a utility core area containing a teachers' room, washrooms and storage space. The partitions between any two classrooms can be removed to provide a large recreation area.

An important advantage of the design is its extreme flexibility, enabling the school to be enlarged by merely adding basic sections. To meet shifts in population, the school can be disassembled and moved to another site in several weeks. The building may be disconnected easily from its foundations which consist of jack-screw supports on separate footings. Most of the materials can be re-used.

The exterior walls of the building are of asbestos-cement panels. The roof deck is made up of 49-in. square wood-fiber panels and was installed by a dozen men in less than two days.

The Hoover School is comprised of basic parts made by the Unistrut Corp., Wayne, Mich. The roof deck is a product of Tectum Division, Peoples Research & Manufacturing Co., Newark, Ohio.

Traffic Tangle Tonic

Billion-dollar road plan proposed for Philadelphia

During the next 25 years, at least $1.6 billion worth of new construction will be needed to meet the traffic tangles of Philadelphia's metropolitan area.

This is the forecast of the Urban Traffic and Transportation Board set up by Philadelphia's Mayor Joseph S. Clark. The board—representing industries involved in the transportation problem—based its estimate on an 18-month survey of Pennsylvania and New Jersey counties included in Philadelphia's metropolian area.

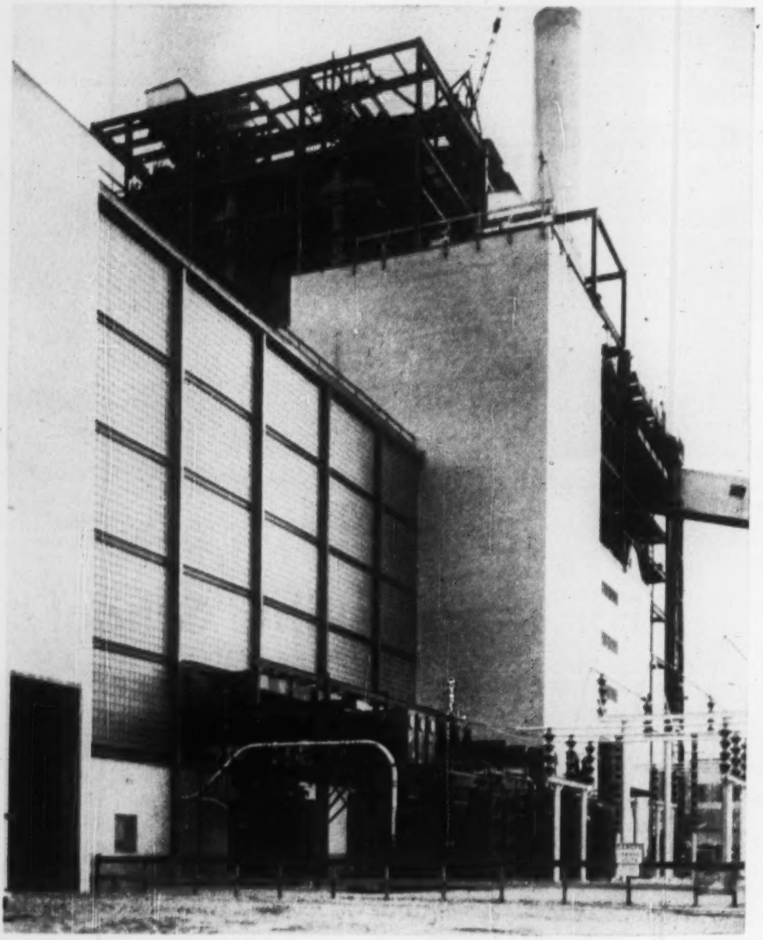
Needs for the five-county Pennsylvania section—including Bucks, Chester, Delaware, Montgomery and Philadelphia Counties—are placed at $1.5 billion. This would involve $780 million for new expressways; $280 million for other highways and road improvements; $350 million for improvement and integration of mass transit; and $85 million for setting up parking facilities.

Estimates of transportation needs in the three New Jersey counties included in the greater Philadelphia area are incomplete. But it is expected that much less work will be required there. Problems of these counties are still being studied under sponsorship of the Delaware River Port Authority.

The report predicts that by 1980—unless drastic steps are taken—Philadelphia's central business district will have reached the saturation point, traffic-wise.

Since 1947, transit riding in the area has declined 35%, and another 16% drop is anticipated before an improved transit service starts attracting people back through the turnstiles. During this same 7-year period, traffic volume has doubled and auto registrations have increased 70%. By 1980 there will be an estimated overall 5% increase in the number of commuters traveling to and from the city-center area. And this 5% is expected to boost the number of motorists by at least 25%.

The report indicates that the state and federal governments will have to be called upon for the bulk of funds needed for the construction program. The $1.6-billion estimate is nearly five times Philadelphia's total 1956 budget of about $265 million. And because of demands imposed by other needs—such as housing and redevelopment—the board believes that it is unwise for the city or other local governments to assume heavy financial burdens for transportation.



Glass Block Walls Ease Maintenance

At Philadelphia Electric's new Cromby Station, a potentially troublesome lighting and maintenance problem has been solved by the use of towering walls of glass block.

Cromby Station is located on the west bank of the Schuylkill River about 30 mi northwest of Philadelphia. The first turbine-generator of 150,000-kw capacity is now in service. The second unit of 200,000-kw capacity is scheduled to begin operations shortly.

Glass blocks form the entire 5-story-high north and south walls of the huge room that houses the two generating units. Over 11,000 light-diffusing blocks, a product of the Pittsburgh Corning Corp. are set in structural steel framework at each end of the generator room.

Cool Community

702 Levittown (Pa.) houses will be air conditioned

The largest single contract for residential air conditioning was inked last week by mass-builder William Levitt and Cloud Wampler, president of Carrier Corp. The contract calls for delivery of 702 air-conditioning units, which Levitt will install in his $18,900 "Country Clubber" homes in Levittown, Pa.

Wampler described the contract as "Carrier's—and the whole air conditioning industry's—major breakthrough into the volume housing market."

Levitt, too, sees wide implications in his decision to put central air conditioning in houses for the middle-income market. He stated, characteristically, "If Levitt goes air conditioned, the entire building industry goes air conditioned—it's as simple as that."

Whether it is or is not as simple as that, the contract marks a major step toward removing the luxury label from residential central air conditioning. Significantly, Levitt will sell the houses at the same price as models previously built without central air conditioning in the Levittown community.

The cooling units for the Levitt houses are 5-hp models with air-cooled condensers. The compressor-condenser will be placed in the garage, with the fan, cooling coils and plenum ceiling-mounted in the attic space overhead. Conditioned air will be ducted to ceiling diffusers in the kitchen, living room and dining area, and to the three ground-floor bedrooms. As installed, the conditioning unit has sufficient capacity and ductwork to provide cooling for the expansion second floor, which has space for two more rooms and a third bath.

Levitt made only a few minor changes in the design of the Country Clubber house after deciding to install air conditioning. A window wall in the living room will henceforth be a picture window with a raised sill, and a few other windows will have fixed panes, since the need for natural ventilation is reduced.

Levitt has not shifted from his hot-water panel-heating system, so the air conditioning and ducting is a completely separate installation.

The 1956 models are typical Levitt housing packages. The price tag includes more than 12,000 sq ft of landscaped grounds; finished, equipped kitchens; a 2-car garage; finished floor area of 1,500 sq ft with staircase leading to expansion second floor area; three bedrooms and 2 baths; and a slate patio.

With construction planned for spring, the schedule calls for completion of five houses per day.

Asphalt or Concrete

Dispute centers on costs of Washington Turnpike

The newly-organized Cement Industry of Washington State has taken strong exception to an engineering recommendation that the proposed $194-million Tacoma-Seattle-Everett tollway be surfaced with asphalt rather than concrete.

A brochure published by the Cement Industry admits that the 65-mi toll road would cost $957,970 more initially if built with concrete. But it contends that maintenance of concrete paving over a 35-year period would cost only $1.2 million as compared with a cost of $7 million for asphalt.

The cement producers take issue with the estimate of Greiner-Tudor Associates, consulting engineers retained by the Washington Toll Bridge Authority to prepare a civil engineering report on the proposed tollway. The engineers estimate that concrete pavement should be completely resurfaced every 17½ years. The Cement Industry contends that the national average life for concrete pavement is 28 years. It also asserts that the toll road, built of concrete, can be expected to last from 40 to 50 years without resurfacing.

A mid-September report by the New York engineering firm of Coverdale & Colpitts established feasibility of the western Washington toll road project. If the state's supreme court upholds the enabling act, condemnation for the route is expected to begin early this year (ENR Dec. 15, 1955, p. 32).

Hydro Bonds OK'd

Voters back $85-million issue for power project

By an almost 8 to 1 margin voters in the Sacramento Municipal Utility District approved an $85-million revenue bond issue for the development of a power and water project on the Upper American River north of Sacramento, Calif.

The SMUD plans call for four powerhouses, three major dams, seven smaller diversion dams, tunnels and transmission lines to be constructed along a stretch of the American River and its tributaries.

It will add 200,000 kw to the SMUD power supply to augment the 290,000 kw contracted for by SMUD from the federal Bureau of Reclamation's Central Valley project.

SMUD already has entered into a contract with the Pacific Gas and Electric Co. whereby the private power concern will "firm up" the SMUD hydroelectric output.

SMUD will ask for rights to unappropriated water in the development area at a State Division of Water Resources hearing expected to be held in February.

The district also will press for early approval of the power project from the Federal Power Commission.

Financial experts have advised SMUD officials that bond firms will vie for the chance to buy the revenue bonds and a low interest rate is anticipated.

Frank E. Bonner of San Francisco is the consulting engineer who drafted plans for the SMUD hydroelectric development.

Gas to Northwest

521-mi pipeline will feed Washington and Idaho

Fish Northwest Constructors, Inc., will begin building 521 mi of natural gas pipeline laterals this month to serve eastern Washington and northern Idaho.

The lines will be used by Pacific Northwest Pipeline Corp. to distribute gas from the San Juan basin in the U. S. and the Peace River fields of British Columbia. Construction of several laterals not previously planned and extension of others were made possible by Federal Power Commission approval of a proposal to import gas from Canadian fields.

One lateral running from the main line to Pasco and Kennewick, Wash., will be increased from 12 to 20 in. to serve Columbia Basin communities. Under other plans an 11-mi lateral from Pasco to the Hanford Works will be increased from 6 to 8 in.; the Spokane lateral, to 74.5 mi of 20-in. and 49.5 mi of 16-in. line; the 68-mi lateral to Wenatchee, Wash., to 8-in.; and the 72-mi lateral to Yakima, Wash., to 8-in.

In addition, the construction firm will put in an 87.2-mi extension from the Spokane line to Lewiston, Idaho; a 9.7-mi line to Moscow, Idaho, and a 35.4-mi lateral between Spokane and Coeur d'Alene, Idaho. Another new extension to the Spokane lateral will run 98.6 mi to Boundary, Wash., near the international border, and a line from this will be extended 18.6 mi to Metaline Falls, Wash.

TVA Totes Up

Power deficit foreseen if expansion ban continues

The fiscal year 1955 saw more power added to the Tennessee Valley Authority system than any previous year. There were 1,700,000 new kilowatts put on the line to bring the total installation to 7,810,000 kw, and since the end of the fiscal year this figure has grown to 9,000,000 kw.

It is two years since TVA started construction of its last new generating station. The report for fiscal 1955 views this fact with some alarm in the light of a growing demand for electricity in TVA's service area of an estimated 750,000 kw a year. The authority expects a 500,000-kw deficiency late in 1958 and points out that it takes about three years to complete a steam power plant of the size needed to meet its area's apparent annual growth in demand.

Fiscal '55 was also a year in which:

Power revenues of $118 million exceeded expenses by $48 million.

Legislation for financing of new TVA construction through sale of bonds was submitted to Congress.

TVA dams averted about $1 million worth of flood damage.

1954 navigation figures of 1¼ million ton-miles appeared due to be exceeded by 27%.

Recreation facilities along TVA lakes reached an estimated value of $47.5 million.

Second Ohio 'Pike

Latest set of revisions could save $200 million

To date the Ohio Turnpike Commission has recommended savings that would slash some $170-$200 million off the price tag of its proposed second turnpike.

The latest recommendation is elimination of the proposed Toledo spur running from the Columbus area to the Toledo area. This deletion would pare down the turnpike's original $516-million cost estimate by $94 million.

The commission already has come up with other suggestions for making the 400-mi project financially feasible (ENR Dec. 22, 1955, p. 15). One plan calls for saving $44 million by the use of 45 mi of U. S. 40 east of Springfield and a portion of U. S. 42. Further savings of $36 million would be effected by changing some turnpike design features—and by turning over to the State Highway Department the job of constructing Lakeland Freeway at Cleveland and extensions to Mill Creek Expressway at Cincinnati.

The turnpike still would be regarded as one project, even though it would include the 45-mi stretch of state-constructed freeway between the Springfield and Delaware areas as well as Ohio-operated freeways on either end. The commission has recommended that all these links—plus sections of highway improvements leading toward Toledo—should be built to turnpike specifications.

New studies of the toll-road project are responsible for the proposed changes. Originally, cost of the north-south system linking Cincinnati with Conneaut and featuring the Toledo spur was estimated at $516 million by J. E. Greiner Co., Baltimore consulting engineers. Coverdale & Colpitts of New York then estimated that revenue would not be enough to attract investment firms.

Consulting engineers, however, reportedly have revised upward their estimate of revenues and now place receipts for the first year at $25.8 million. If portions of U. S. 40 and 42 are used, the revenue would be about $1 million less. An elimination of the Toledo spur would cut annual revenue to about $23.4 million.

• Other 'pike has problems too—Meanwhile, the commission is facing a toll problem with the recently-completed first Ohio turnpike. Truckers have registered strong complaints that tolls are too high on this 241-mi super-road, and turnpike officials have promised to re-examine rates.

At present, truck tolls run from $8.25 to $30 for a trip along the new turnpike's entire length. And a recent report shows that one-third of the November revenues of $839,000 was paid by trucks.

$22-Million Road Contracts Slated for Illinois Letting

The Illinois State Highway Department this week was preparing to get its $127-million 1956 construction schedule off to a flying start. On Jan. 27, it will award $22 million in contracts for some 69 projects—largest single letting in the department's history.

One of the major projects to go under contract this month will be the final 35 mi of two-lane pavement required to make U. S. Highway 66 a four-lane divided expressway from Chicago to St. Louis.

"Palace" Given Up

Mart atop Penn Station economically unfeasible; but new plan is bigger

Ambitious plans for a $100-million, 500-ft-high merchandise mart atop Pennsylvania Station in New York City (ENR June 16, 1955, p. 26) have been discarded by Manhattan realtor William Zeckendorf, head of Webb & Knapp. Instead, Zeckendorf, who decided the $100-million "Palace of Progress" was economically unfeasible, has unwrapped plans for an even bigger commercial development on Manhattan's West Side.

The new plan, which would cost from $300 million to $500 million, calls for rehabilitation and commercial redevelopment of nearly 50 acres, covering the land from 30th to 38th St., from Ninth to Twelfth Ave. in Manhattan.

Incorporating many of the facilities originally slated for the "Palace of Progress," Zeckendorf visualizes a series of buildings for the West Side area, including a merchandise mart, auditorium, television center, parking facilities for 20,000 cars, general commercial buildings, a "world's fair" structure and a 1,750-ft "freedom tower," which the developer claims would be the highest observation tower in the world.

Railroad prexy Robert R. Young, reportedly interested in the project, may urge New York Central directors to invest the railroad's funds in the new plan.

There's a big hurdle to jump, however. The city would have to acquire the land, probably by condemnation, as an urban redevelopment scheme, then resell the land to Zeckendorf. City officials are studying the plan.

Road Plans Offered

Big bond issue for Mass., R. I. has access problem

Opening of the Massachusetts legislature has brought a request for a $200 million highway bond authorization. And, in neighboring Rhode Island, Legislators have been asked to take action to eliminate traffic hazards resulting from unrestricted exits to commercial developments along the state's major highways.

Gov. Christian A. Herter recommended boosting the Massachusetts gas tax by one cent to support the proposed $200-million bond issue, for stepped up improvement and expansion of the state road system.

In requesting creation of a highway access control commission to suggest corrective measures, Gov. Dennis J. Roberts' message to the Rhode Island legislature declared:

"Concentration of stands, gas stations and restaurants along a four-lane artery tends to convert it into a two-lane road. Thus the state gets less for its money than expected. And the highway becomes obsolete before its time."

The Rhode Island Governor also asked for a three-member commission to encourage local initiative in building off-street parking facilities. One of its major tasks would be to determine whether the state should participate financially in these community developments.

New Ideas Using Aluminum Curtain Walls Worth $25,000

The Aluminum Company of America has announced a $25,000 contest to bring forth new design and construction ideas for aluminum curtain wall buildings.

The competition is open to architects, designers, architectural draftsmen and students of architecture residing in the continental United States or Canada. The awards will be a first prize of $10,000; a second prize of $5,000; third prize of $2,500, and 15 honorable mention awards of $500 each.

Co-sponsored by Alcoa and the National Association of Architectural Metal Manufacturers, the contest will award prizes on the basis of "excellence of design" and "ingenious and practical construction methods" for a hypothetical building.

The contest closes midnight March 26. Programs for the contest may be obtained by writing Mr. Paul Schell, AIA, c/o National Association of Architectural Metal Manufacturers, 228 North LaSalle Street, Chicago 1, Ill.

LEADER—Lt. Col. J. C. H. Lee, Jr., is in charge of Delaware Valley Report Group.

How Much Water?

Group will examine need of Delaware Valley area

A new unit—a Delaware Valley Report Group—has been set up within the Philadelphia District of the Corps of Engineers, according to an announcement last week by Col. Allen F. Clark, Jr., district engineer. The unit is to carry out a comprehensive survey of the Delaware River and its tributaries to determine what the current needs are for all phases of water resources development.

Target date for completion of the survey is January 1959.

Lt. Col. John C. H. Lee, Jr., has been placed in charge of this unit and is currently assembling a diversified staff including civil engineers, statisticians, economists, geologists, hydrologists, and power engineers.

The immediate objective of this group is the review of all previous reports on the Delaware Basin by the federal government or other agencies. Review will cover all aspects of flood control, navigation, water supply, hydroelectric power and irrigation.

Four public hearings are being held to obtain the views and recommendations of other federal agencies, as well as local agencies, private industries and individuals. The first was held in Port Jervis, N. Y., on Jan. 6; the next will be held in Stroudsburg, Pa., on Jan. 13; then in Trenton, N. J., on Jan. 20; and in Philadelphia on Jan. 27.

The Delaware valley report group will study and evaluate all data obtained through these hearings, make necessary field investigations, preliminary plans and estimates as may be in order, and then prepare a report for Congress its findings and recommendations.

Lt. Col. Lee, who heads the survey, was in charge of recent flood rehabilitation work in the area and more recently was in charge of the district's military construction program.

Sunken Office Space

Insurance building design keeps occupants in mind

A 20-story building for the home office of Mutual Benefit Life Insurance Co. in Newark, N. J., will have special facilities for data and paper handling. Costing in excess of $10 million, the structure designed by Eggers and Higgins, New York architects, will be built by the George A. Fuller Co.

To accommodate a large electronic-data processing installation, steelwork under an area of about 4,000 sq ft of floor space will be dropped several inches, so that the grid system of electrical raceways that interconnects the electronic equipment will not cause variations in floor level. The independently air-conditioned data-processing area will have two separate powerline inputs, with automatic switching, so that continuity of power to the electronic installation is assured in case of failure in one power line.

To handle interoffice communications, a pneumatic-tube system with electronic controls will be installed. The 4x7-in. oval tubes will connect more than 35 stations within the building, and deliver from any point to another within one minute.

Excavation and foundations for the building are nearly completed; the bolted steel framework will be started in early February and completed in about 17 weeks. The contract calls for completion of the entire building during the summer of 1957.

Charles B. Spencer Dies: Noted Foundation Expert

Charles B. Spencer, one of the nation's top engineering and construction experts in the field of foundations, died Jan. 7 in New York City. He was 69 years old, and head of the firm of Spencer, White & Prentis, Inc., which he helped found 35 years ago.

Mr. Spencer received both an AB and CE degree when he graduated from Columbia University in 1910. An outstanding student, he was a member of both Sigma Xi and Tau Beta Pi. During the years before World War I, he worked on railroading, tunneling and foundations, and then, after service in France, returned home to found the firm which he headed until his death.

Spencer, White & Prentis has numbered among the 1,200 or more contracts that it has carried out some of the most intricate and difficult foundation jobs of the past three decades. Underpinning the White House was one. Sinking foundations for the 70-story building at 40 Wall St. before an old 13-story building was removed from the site was another. Among the other jobs that Mr. Spencer and his firm carried out were contracts on both the 8th and 6th Avenue subways in New York, on the Union Railroad Terminal in Cleveland and on locks and dams on the Mississippi.

Mr. Spencer was president of the General Contractors Association in New York for two terms, and was also president of the Moles.

Housing Record

Homes push construction put-in-place to $42 billion

Sparked by a record volume of homebuilding, construction put-in-place in 1955 set an all-time record of $42¼ billion. The total was 12% above 1954.

Private construction expenditures jumped 17% over '54 to reach $30¼ billion, while public works put-in-place edged up 2% to hit a total of $12 billion.

Increased residential building accounted for two-thirds of the total dollar gain over 1954. Homebuilding for the year reached a new peak of $16.6 billion, well above the previous high posted in 1954.

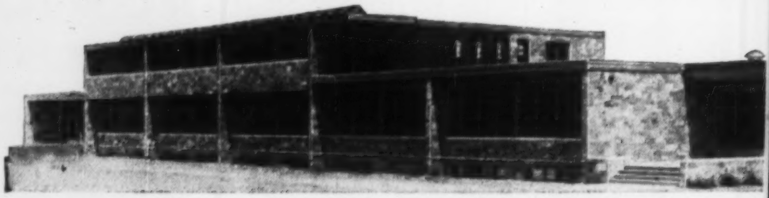
New put-in-place records also were posted for other types of construction including shopping and service establishments, churches, private industrial plants, office buildings, public schools, sewer and water lines, highways and petroleum pipelines.

While they didn't set any new records, private hospitals, social and recreational buildings and military facilities topped the 1954 totals. Strongest of these three categories was military construction.

All other major categories were down from '54. These included: Public industrial building (mostly AEC installations), public housing, conservation and development work, farm construction, public hospital facilities, private schools, and railroads.

The year ended on a strong note for construction put-in-place. December construction expenditures for all new construction totaled nearly $3.2 billion—down a seasonal 12% from November, but 3% above December '54.

Immaculate Heart of Mary Church School
Youngstown, Ohio
P. Arthur D'Orazio, architect;
Charles Shutrump and Sons, Co., contractor.



TRUSCON® "O-T"® Open Truss Steel Joists, Ferrobord® Steeldeck and Projected Steel Windows Help Create This Exciting

Daylighted outdoor corridor

This interesting outdoor corridor has been designed into the new Immaculate Heart of Mary Church School in Youngstown, Ohio. Almost monastic in appearance, the second floor corridor has been roofed by extending Truscon "O-T" Steel Joists and structurals across its full width. Truscon Ferrobord Steeldeck completes the roof except for a run of clerestory windows which bring daylight directly into the Truscon Architectural Projected Windows of second floor classrooms.

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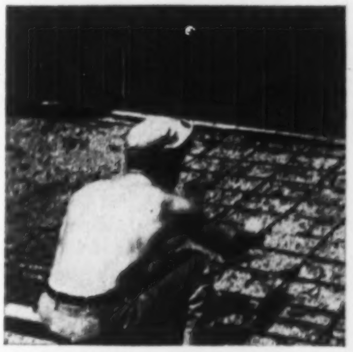

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☐ Truscon Steel Windows ☐ Truscon Ferrobord Steeldeck
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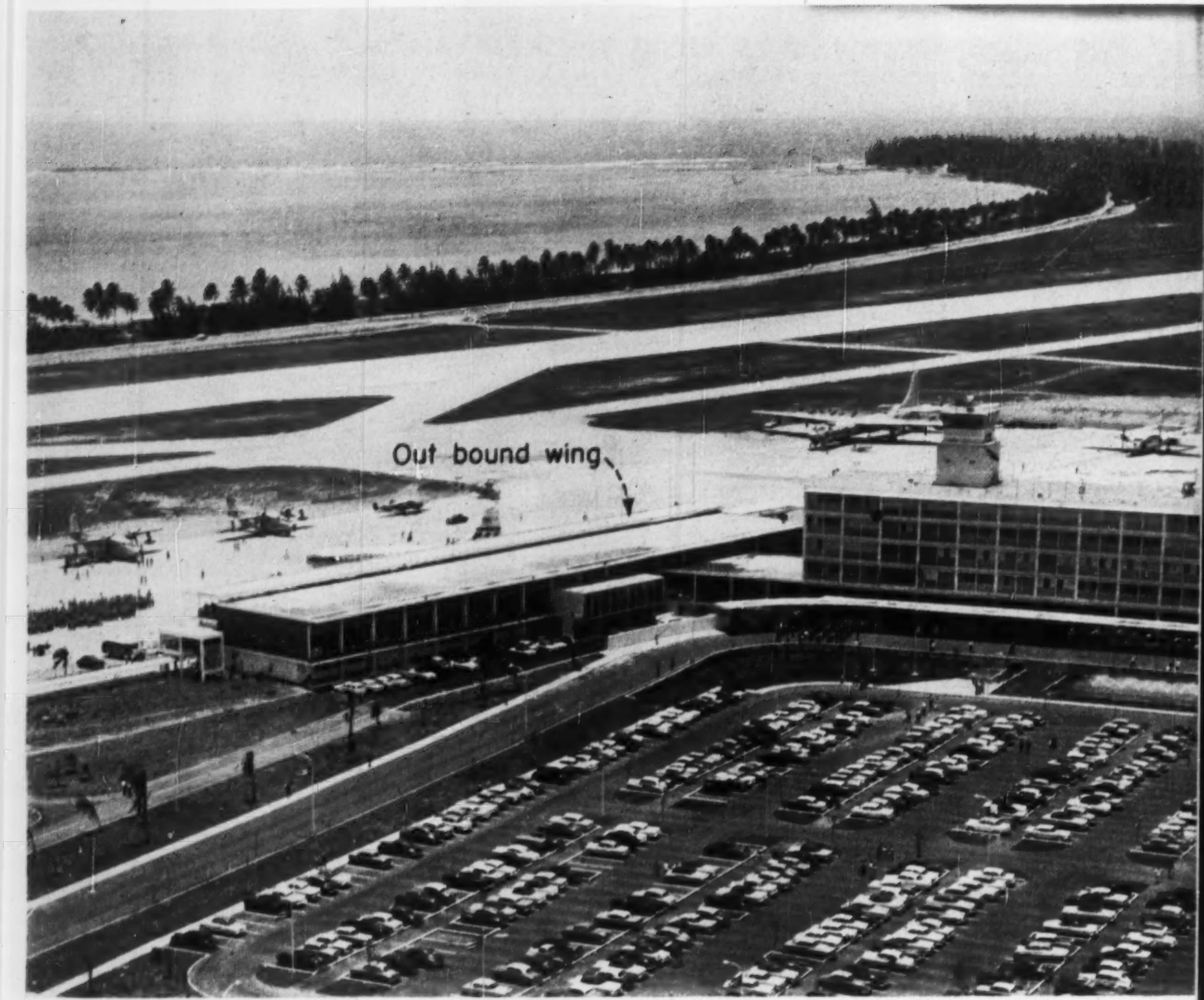


To handle air travelers by the thousands daily . . .

Terminal Subdivides Traffi

Whether arriving or departing, the air traveller is going to find it easy going at Puerto Rico's new Isla Verde International Airport, for smooth traffic flow of aircraft, vehicles and passengers has been designed into the $15 million airport.

The airport is located about seven miles east of downtown San Juan on the coastline. A single runway 7,800 ft long and 200 ft wide will serve traffic for the forseeable future. Provision has been made for a second runway should the need arise.

The major airport facility is the Passenger Terminal Building, which is situated near the midpoint of the runway. Other structures include a cargo terminal and a police and fire station. Nose hangers and a maintenance building are scheduled for future construction. There are 4.8 miles of roads within the airport, and parking space is planned for over 1,000 cars. In addition to the usual utilities, there is an emergency power installation and storage for 250,000 gal of water.

Facile operation of the entire airport revolves about the Passenger Terminal Building. Its position and plan were determined through studies of aircraft, passenger and vehicular circulation.

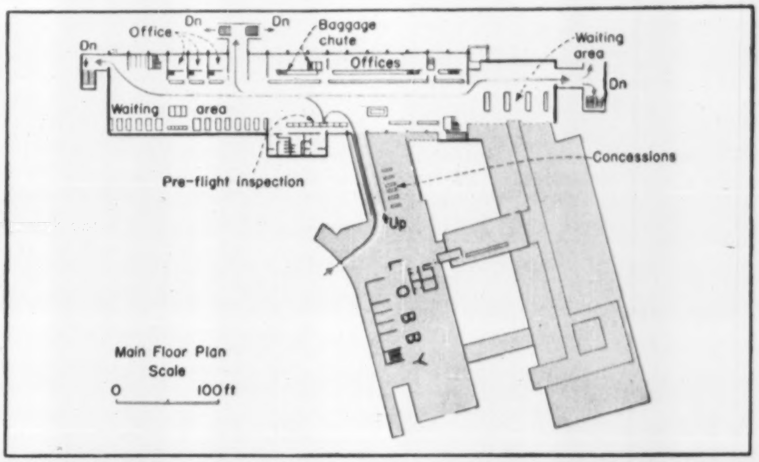
Aircraft received primary consideration; a one-way system of traffic was developed which gave the shortest taxi distances for both arriving and departing aircraft.

In designing for cargo handling, this aircraft pattern was taken into account. The solution was a separate cargo terminal adjacent to the passenger terminal.

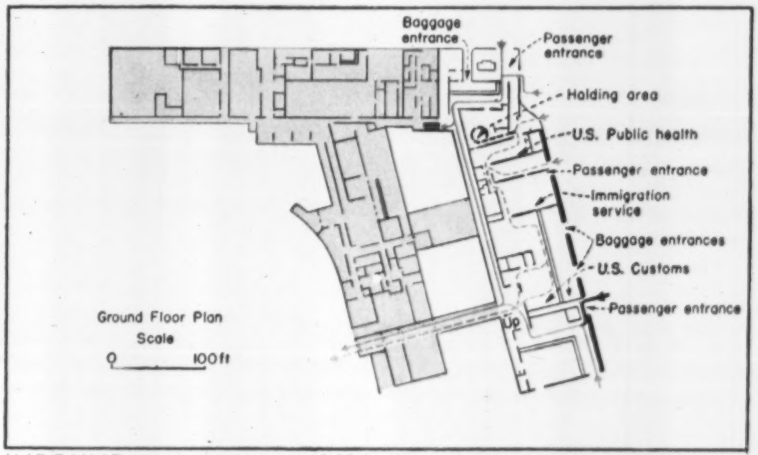
The survey of air traffic showed that there was a high proportion of flights terminating or originating in Puerto Rico. Based on this, the plane positions were allotted by type of flight—originating, arriving or transient. These separate plane positions will be used by all the airlines rather than the usual procedure of each carrier having his own position.

From this separation of traffic stemmed the layout of the terminal. The passenger terminal consists of three wings: a one-story inbound wing, a two-story outbound wing and a six-story central wing consisting of the main lobby, administration and services. The building has an area of 210,000 sq ft, cost over $3,500,000.

In bound wing


Dn
Office
Dn
Baggage chute
Dn
Offices
Waiting area
Dn
Waiting area
Concessions
Pre-flight inspection
Up
LOBBY
Main Floor Plan
Scale
0
100ft

OUTBOUND passengers follow route shown by red arrows through Puerto Rico's new terminal. From the lobby, passengers go up a ramp a half story, past concessions to the ticket counters, inspection stations and waiting areas, then descend to field.


Baggage entrance
Passenger entrance
Holding area
U.S. Public health
Passenger entrance
Immigration service
Baggage entrances
U.S. Customs
Passenger entrance
Up
Ground Floor Plan
Scale
0
100ft

INBOUND passengers enter at field level, pass customs, immigration and public-health-service stations, ascend a half story to the lobby and exit. (Solid arrows denote path of U. S. citizens, dotted arrows that of others.)

for Efficiency

The one-story wing encloses the processing areas for the arriving passenger. Here are found Customs, Immigration, Public Health Services and the Puerto Rico Department of Agriculture.

For the departing passenger, there is a two-story outbound wing where are found the airline ticket counters, pre-flight inspections and facilities for recreation and passenger service. This wing is adjacent to the departing flight positions on the flight line.

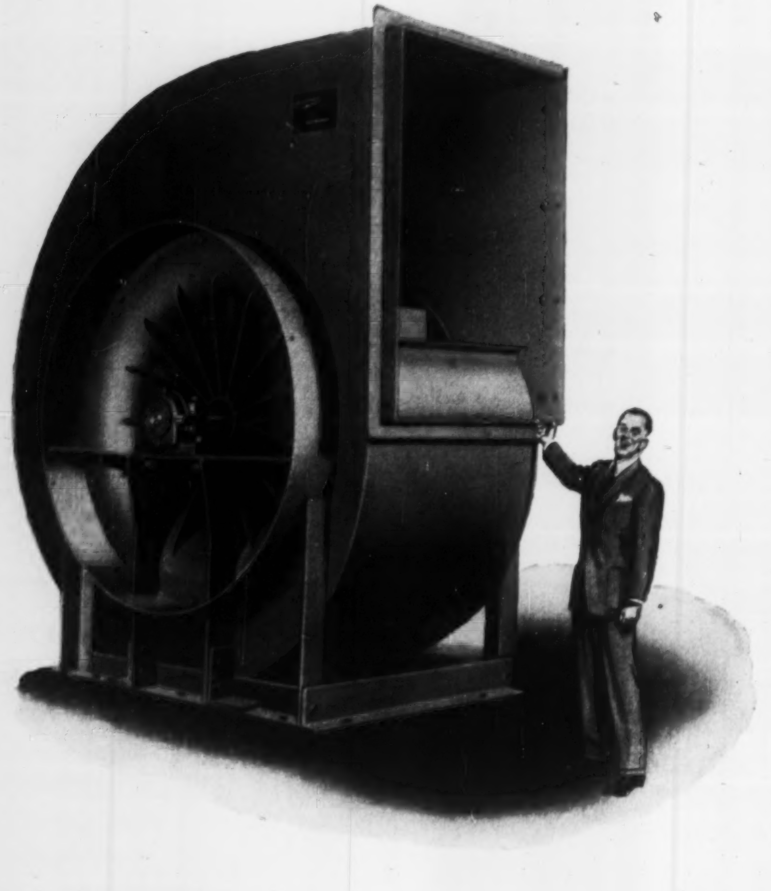
Flights that have a short-term turnaround and in-transit flights occupy positions between the originating and terminating flights, so that there is convenient access to all the terminal facilities.

The separation of air traffic also permits separation of passenger traffic. Studies show that the interests of the departing passenger are different from those of the arriving one. The departing or in-transit passenger and his guests have time to spend at concessions and make use of the auxiliary services provided. The arriving passenger is principally interested in reaching his destination beyond the airport and spends little time within the building. This separation of the principal types of passenger traffic gives maximum opportunity to provide for the needs of both without cross circulation and compromise.

The passenger enters or leaves the terminal from a central lobby, which is connected by ramps to the apron level, the one-story inbound wing and the two-story outbound wing. This central lobby is at a half level between the main passenger areas in the two wings.

In addition to the lobby, the central wing—six stories high—has principal concession areas, administrative offices, a floor devoted to the Civil Aeronautics Administration and space for the Weather Bureau. There are also 30 hotel roomettes, each with private bath, a restaurant, coffee shop, bar, and employee cafeteria. All areas, except the lobby, are air conditioned. Atop this center section of the building is the control tower, at a height of about 85 ft above apron level.

The Passenger Terminal Building is a concrete framed structure, designed to withstand earthquakes. The two-story and six-story wings are supported on concrete piles; the one-story element on a slab foundation. Nearly all the public spaces of the building are open to the elements, without fixed walls and windows, to take advantage



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of the pleasant climate and the constant breeze.

A four-lane divided highway serves as the approach to the Terminal Building. Truck traffic to the cargo terminal and service traffic are diverted before reaching the parking fields and terminal entrance. Buses, taxis and automobiles are unloaded along a 140-ft-long covered platform in the front of the Terminal Building. An underpass leading directly to the building from the parking fields makes it unnecessary for a pedestrian to cross the main entrance road when leaving or going to his car.

Constructed of reinforced concrete, the cargo terminal is 430 ft long by 80 ft wide. Along the long sides of the building are continuous covered loading platforms. Similar to the passenger terminal, it was designed for earthquakes. Roof beams are prestressed concrete members, and the roof is formed of precast channel slabs.

The buildings scheduled for future construction are to be similar in appearance and design to those already built.

Engineering for the airport was by the New York City firm of Knappen-Tippetts-Abbett-McCarthy. The Puerto Rican firm of Toro, Ferrer & Torregrosa, architects, were associated with KTAM in the design of the passenger terminal.

General contractor for the Passenger Terminal Building was Caribbean Enterprises, Inc. of San Juan, P. R. The Cargo Terminal Building was built with Caribbean Electric Corp. of Santurce, P. R., as general contractor.

Engineer Registration Nearing 200,000 Mark

The number of engineers registered or licensed by state boards is nearing the 200,000 mark, according to the annual report of T. Keith Legare, executive secretary of the National Council of State Boards of Engineering Examiners.

The total number of registration certificates issued by the boards actually is up to 201,633, but this figure includes many duplications. Mr. Legare estimates the total registered professional engineers at 197,000.

The number of engineers seeking to be registered in more than one state also appears to be on the increase. The total number of non-resident engineers registered by the boards is 39,585, which figure includes many duplications.

To facilitate registration in more than one state, the national council operates a National Bureau of Engineering Registration.

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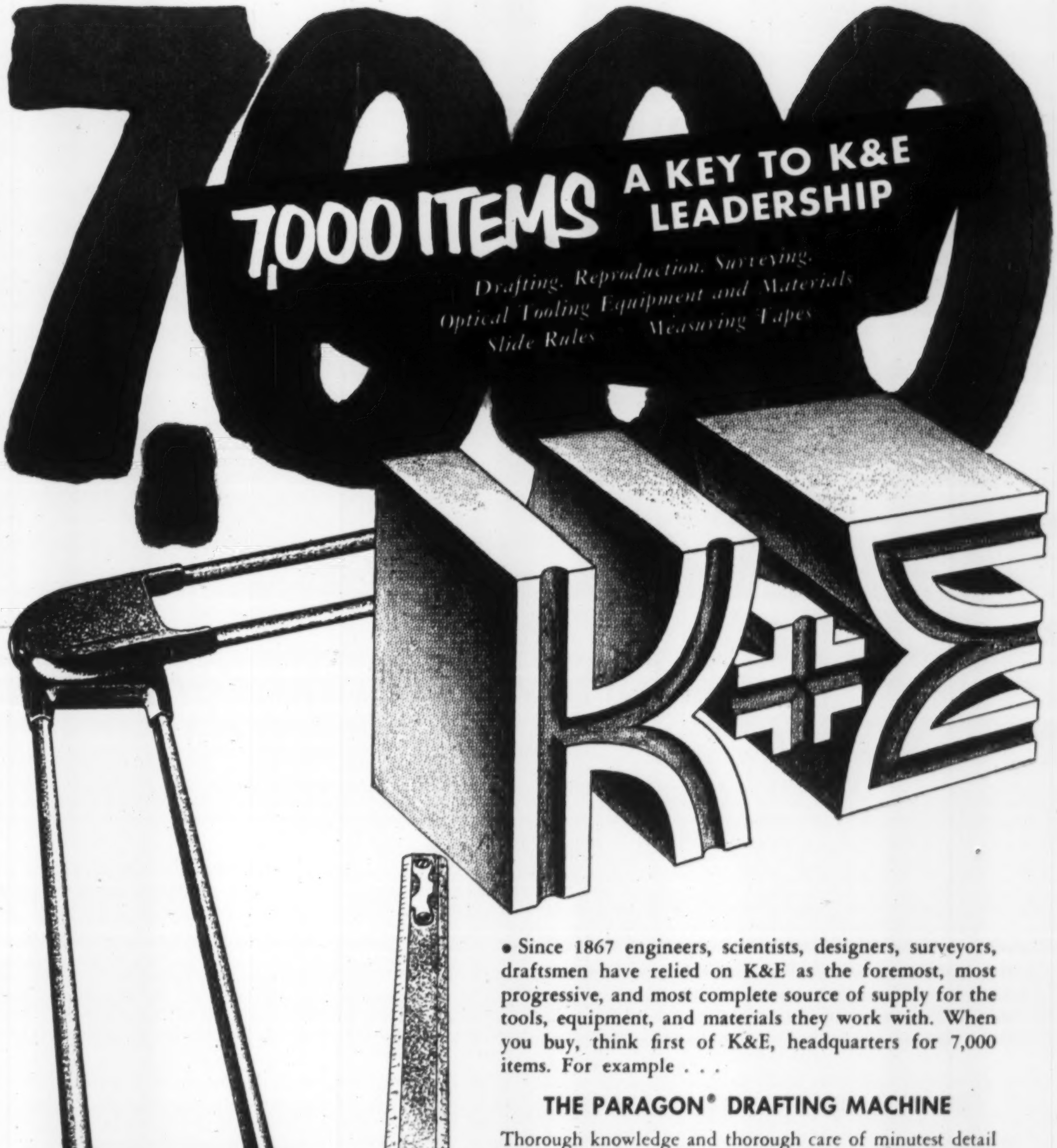

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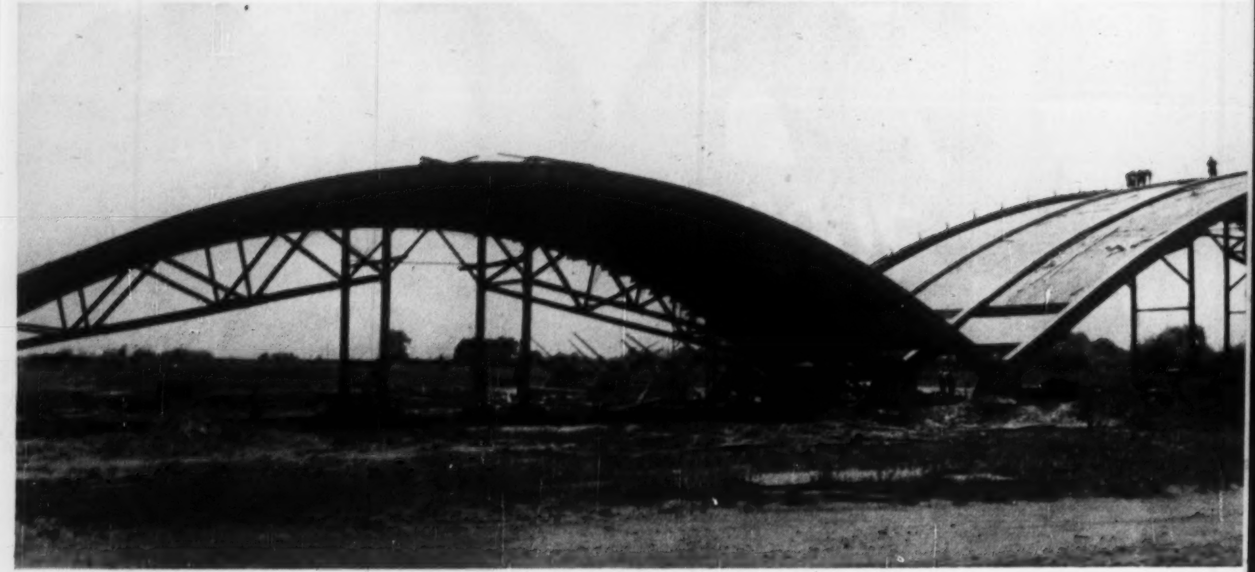

Concrete arches span up to 175 ft for shop and gymnasium buildings of Washington school as . . .

Northwest Engineers Turn to

Reinforced concrete thin-shell roofs that form graceful arched structures are setting a new pattern for building construction in the state of Washington. Right now, there are five jobs—a new high school at Ellensburg, Wash., and four other schools. Thin-shell roofs are also planned for seven additional schools, principally in the Seattle and Yakima areas, as well as an Air Force hangar at Moses Lake.

Thin-shell construction was chosen for these projects because it makes possible a fire-resistant building at a relatively low cost. The design appears to have caught on more quickly in Washington than in other parts of the country because of a price advantage there of concrete over steel.

The interest of Seattle engineers in thin-shell construction is indicated by enrollment in a "Short Course in Thin-Shell Roof Design" offered in the area by the Portland Cement Association. The quota of 40 students was filled within a few days after the class had been announced. A second class had to be formed to accommodate the overflow.

MECHANICAL SCREED developed by subcontractor moved on steel-angle tracks at speeds up to 12 fpm. Width of rig could be varied from 13 to 22 ft.

• 3-in.-roofs—The Ellensburg school is actually the second thin-shell project in the area. The Green Lake swimming pool in Seattle, completed earlier this year for the Seattle Park Board at a cost of $250,000, was first. This structure has a 3¼-in.-thick, single-barrel thin-shell roof 111x66 ft.

The $1 million cost of the Ellensburg school breaks down to $2,630 per pupil station and $12.31 per sq ft. The general contractor—Wall, Bartram & Sanford of Junction City, Ore.—also is the contractor for the $800,000 West Valley high school of similar design 40 miles west of Yakima.

The high school is in reality seven separate but inter-related buildings, arranged in a campus-type plan, each of some type of reinforced concrete construction. Thin-shell construction is used for the gymnasium, the shop building, and a music and arts building. The three classroom buildings and the boiler plant are of precast concrete.

Measuring 96 x 156 ft in plan, 36 ft high at the top of the arch, the gymnasium is a thin-shell of the ribbed, short-barrel type. The ribs are tied arches, 16 x 24 in. in section, spaced at 19 ft, with a span of 175 ft

Thin-Shell Roofs

and a rise of 30 ft. The 2¾-in. shell is mounted in the center of the rib and has a span of 152 ft. Edges of the shell stop at the outer walls of the building—short of the ends of the ribs, which continue to the ground.

The shop building is of the same construction as the gymnasium and is connected to it. Span of its shell is 80 ft. The arched ribs span 104 ft, with a rise of 18 ft.

The arched roof of the 60 x 228-ft music and arts building is also 2¾ in. thick, with slight thickening at the edges. This roof consists of seven cylindrical barrels, with longitudinal beams (9½ x 16 in.) between the barrels. Each 21½-ft-high barrel has an arch span of 32 ft and a 23-ft radius. It is supported on columns only at the four corners, thus spanning 60 ft in the longitudinal direction. The end barrels extend out to provide cover over the walkway.

• **Movable and reusable forms**—Travelling, reusable formwork speeded the casting of the shells for each building. These movable units were fabricated at Portland, Ore., by Timber Structures, Inc. and assembled at the site.

For the shop, the form consisted of four timber trusses and 2 x 10-in. joists—covered with 1 x 4 sheathing and ¼-in. pressed wood. The thin concrete shell was cast in 19-ft-long

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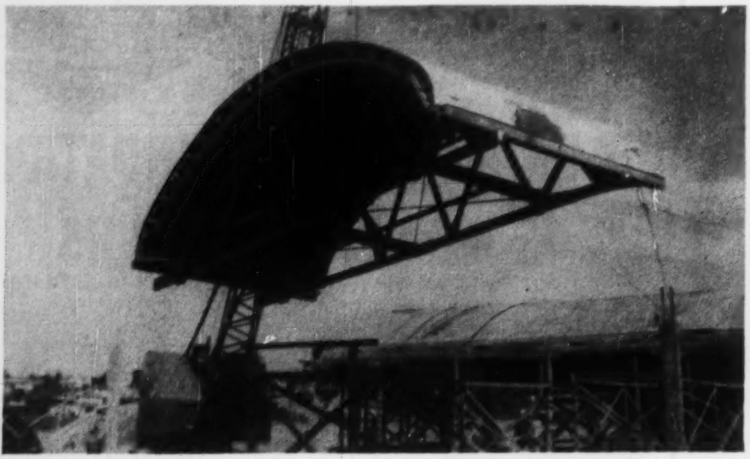
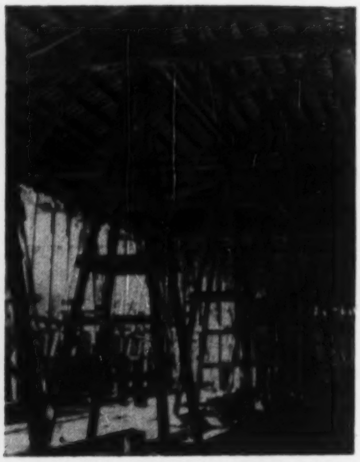


FORM for a seven-barreled music-and-arts building at the Ellensburg, Wash., school was swung into place in prefabricated 32 x 15-ft sections.



BOWSTRING TRUSSES support formwork for Seattle supply building.

sections monolithically with its supporting ribs. After the concrete had set for one 19-ft bay, the forms were lowered about 12 in., in two sections, to clear the arch, and wheeled to the next bay on I-beam tracks.

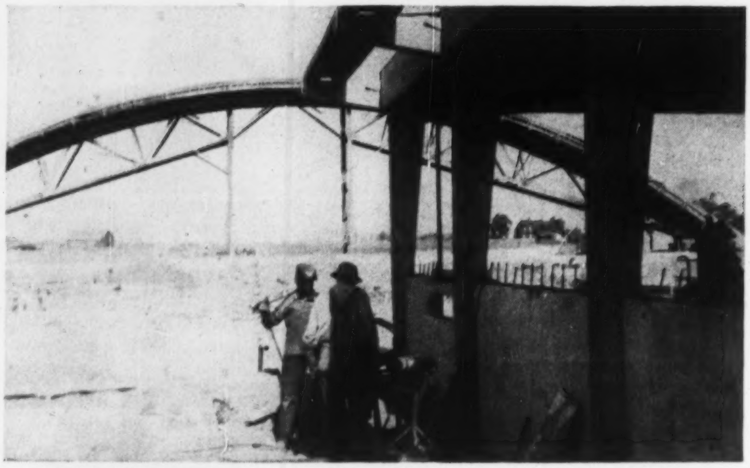
The forms for the shop and gymnasium were each used five times. The gym forms were even used again on the West Valley project after the pressed-wood surface had been replaced by plywood.

Four sets of forms were used for the music and arts building, so that each barrel could be cast in a single operation. After the concrete had set, the forms were lowered to the floor by a crane (through small holes left in the shell), then moved on skids into position for casting the next barrel. These forms were also reused at West Valley—after slight modifications had been made.

• Novel mechanical screed—Casting concrete shells was speeded by development of a mechanical screed by subcontractor, A. C. Bushby & Sons of Ellensburg. Built at a cost of $3,000, the screed has a blade that can be raised or lowered as much as 10 in. and whose angle can be changed. It is a wheeled rig that moves on steel angle tracks—fastened to the forms for the arch—at speeds up to 12 fpm. Power for moving is supplied by a ½-hp motor at either end of the machine. Another motor of ¾ hp oscillates the screed. Width of the rig can be adjusted from 13 to 22 ft.

Reinforcing steel in the shells consists of cross and diagonal bars in the thick sections and wire mesh in thinner regions of concrete.

• Precast classroom buildings—The frame of each classroom building is provided by 12 pairs of precast concrete bents, 9½ x 16 in. in section, spaced at 16 ft. When assembled, these frames provide two 31-ft bays, separated by a corridor 13 ft wide and with a cantilevered sun-control roof slab on one side. The 72 frames for the three 77 x 168-ft buildings were cast on the site, as were the 96 wall sections, 15 ft long, 6½ ft high and 6 in. thick. Yard space and formwork were saved by stack-casting all items six high.



PRECAST CONCRETE BENTS made up the frame of the classroom buildings of the Ellensburg school. Also precast were the 15 x 6½-ft wall panels.

The 1,300 roof slabs, each 2 x 15½ ft, that were used on these three buildings were precast 30 mi. away by the Yakima Cement Products Co. and trucked to the site. They are channel-shaped in cross-section with 1½-in.-thick webs and 2-in.-thick flanges.

• Next job was easier—Experience gained at Ellensburg helped the contractor to shave time on the West Valley school by several weeks. At Ellensburg, for example, considerable difficulty was encountered in placing concrete for the buttresses because of the large quantities of steel required in limited space. At West Valley, the buttresses were cast on their sides, and the buttresses later were lifted into their final vertical position on cast-in-place footings.

Thin-shell construction is also specified for a $2 million junior-senior high school at Yakima, and is contemplated for another high-school at Wapato, 10 mi south of Yakima. If both of these projects are constructed as planned, the Yakima area probably will have more schools of thin-shell construction than any other area in the country.

Another example of thin-shell construction is the $400,000 central supply building for the Seattle Public Schools, now nearing completion near Seattle. Bids were so low that the school board accepted an alternate increasing the number of 33 x 128-ft bays from eight to 14. The roof is a cylindrical, multiple-barrel, thin concrete shell, 3-in. thick at the crown,

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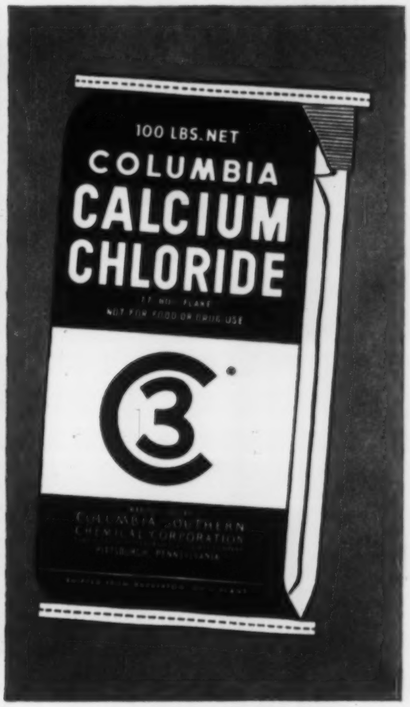

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INCREASED WORKABILITY! Increased workability without change in the water cement ratio when C-3 Calcium Chloride is used.

GREATER ULTIMATE STRENGTH! Ultimate strength is greater, as well as early strength, through the use of 3-C. Typical increases from tests show 9% in 3 years, 10% in 5 years.

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with large (5-ft deep) edge beams and diaphragm end supports.

- **Acoustical board is form**—An ususual aspect of this project is the use of acoustical board as lining for the formwork. The board adheres to the concrete as it sets and remains permanently in place, providing acoustical treatment at a cost of $0.10 per sq ft (taking into account savings in lining the forms). The boards were nailed lightly to the form, which was easily pried loose when the concrete set.

The Seattle school job was cast two barrels at a time. The reusable forms were made up in eight sections that were moved with a fork-lift truck. Cost of the portion of the project employing thin-shell construction is estimated at $4.30 per sq ft.

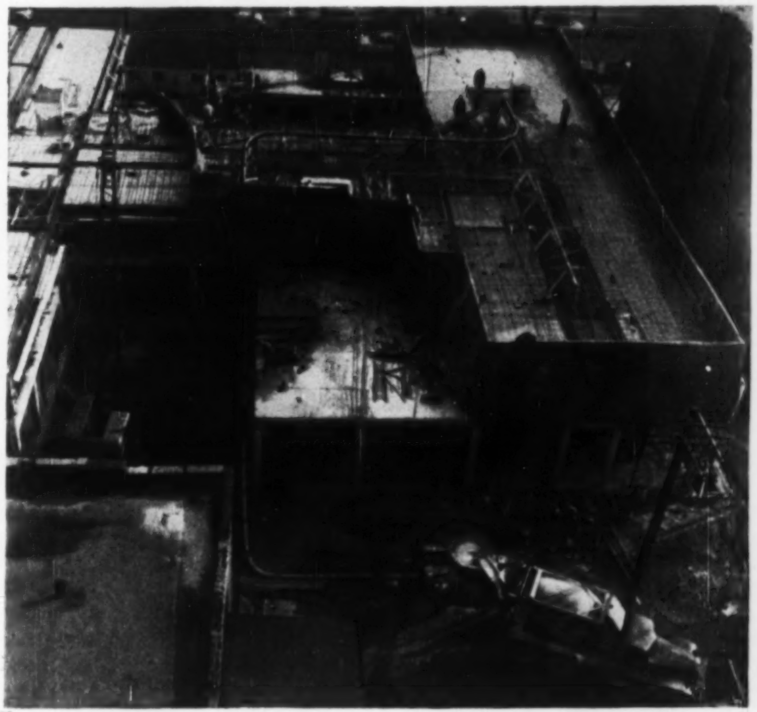
In each case structural engineering was by Worthington & Skilling of Seattle. The architectural firms of John Maloney, Seattle, and John W. Maloney—John H. Whitney, Yakima, are the architects on all the school jobs except one at Wenatchee and another at Bellevue, for which plans were prepared by Naramore, Bain, Brady & Johnason, Seattle.

Names Replace Numbers In Graded Western Lumber

Greater demand for grade-stamped lumber, plus higher volume of consumer lumber buying, has led the West Coast Lumbermen's Association to revise its lumber grading system in the interest of better merchandising. The new grading rule includes two increases in fiber stresses and a few other, minor changes, but the principal revision is a switch from grade numbers to grade names. Within the next 60 days, No. 1 Grade board will be labeled "construction" grade; No. 2 will become "standard"; No. 3, "utility"; and No. 4, "economy."

The nomenclature change applies only to the present numbered grades of boards, and to planks and timbers over 2 in. thick. The lettering system for grading finish, flooring, casing and other clear items remains in effect as before. To line up with current practice, the grade "C&BTR" becomes, officially, the top grade of flat-grain clears.

Quality control revisions in the new ruling increase the fiber-stress value of "construction" (1) grade to 1,500 psi. standard (2) grade fiber-stress value has been increased from 1,100 psi to 1,200 psi. To clear up trouble in quality control of skips in Standard (2) grade lumber, the rule provides that hit-and-miss skips are permissible on the edge of the lumber, but full-length skips, permitted under the older rule, are cut.



Pumpcrete® is located in the alley where it is accessible to truck mixers and away from traffic. Concrete is delivered to third floor of "H" shaped building by pipeline, 160 feet from alley. Note pipeline set in place for pour on other half of floor.

Small crew distributes and vibrates concrete in place. Note absence of cumbersome runways and buggies. Pumpcrete placed approximately 2200 yards of concrete for the building, averaging 15-18 yards per hour.

Reports: "nice going... with PUMPCRETE!"

concrete by pipeline saves time and money on new Chicago building

By eliminating conventional concrete-handling equipment—buggies, runways, lifts—contractor for this four-story "H" shaped structure on Chicago's North Side was able to place concrete at less cost, faster and better with Pumpcrete—the pump that delivers concrete by pipeline!

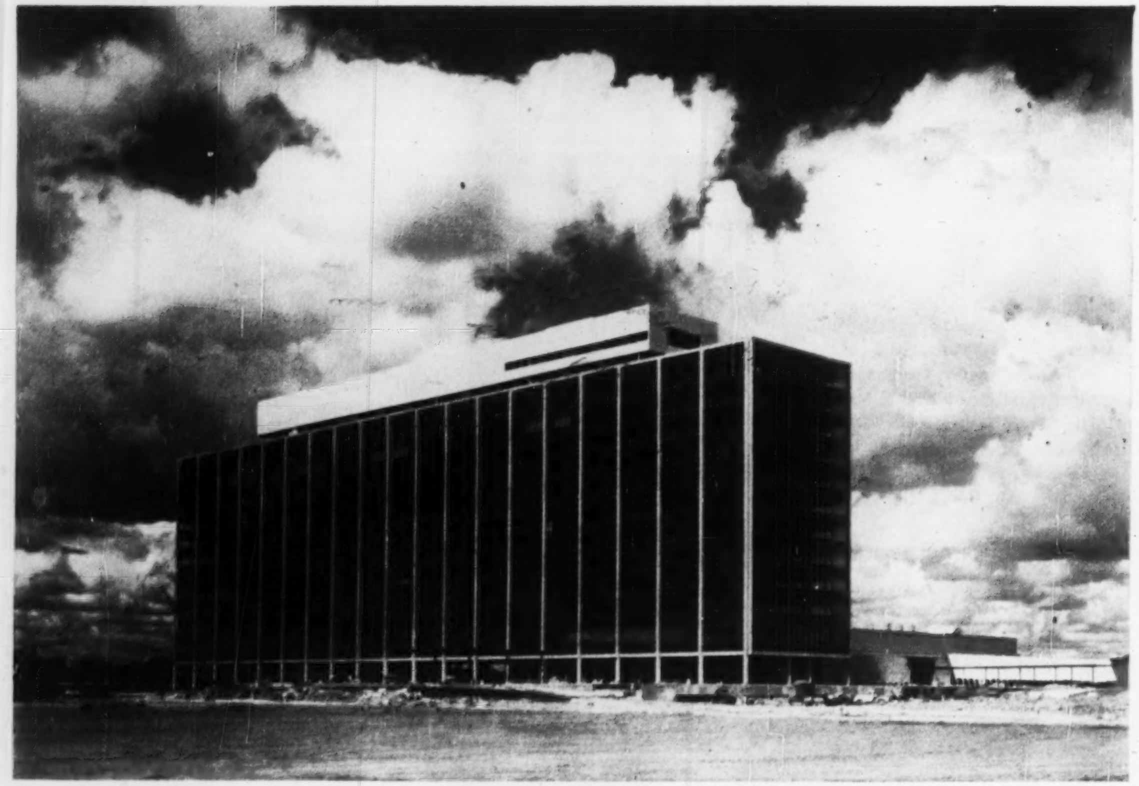
Construction supervisor Harold Arnold of Sumner Sollitt Company, Chicago, reported Pumpcrete eliminated expensive handling equipment. Iron workers, electricians and other trades were able to work on schedule, undisturbed by placing operations—"it's nice going with Pumpcrete."

The single Model 160 Pumpcrete was located in the alley to the rear of the building . . . out of the way of street traffic and easily accessible to truck mixers. This arrangement relieved traffic congestion and expedited over-all job progress.

Investigate the job-speeding, cost-cutting advantages of Pumpcrete on your next job. See your local Rex Distributor or write Chain Belt Company, 4633 West Greenfield Ave., Milwaukee 1, Wisconsin.

CONSTRUCTION REX MACHINERY

CHAIN BELT COMPANY



FORD'S NEW OFFICE BUILDING is divided by projecting columns into vertical strips of windows and enameled panels.

It Has Highly Insulated Walls

Curtain walls for Ford Motor Company's 12-story Central Staff Office Building in Dearborn, Mich., are amazingly thin for the amount of thermal insulation they offer. Though just 2½ in. thick, they have a heat-transmission coefficient (*U*-value) of only 0.15.

The walls are sandwich panels with two types of insulating cores—¼ in. aluminum honeycomb and 2-in. thick cellular-glass blocks.

The honeycomb is laminated to the outer face of the panel, a 16-ga. sheet of dark green-blue porcelain-enameled steel, and to an intermediate 24-ga. sheet of galvanized steel. The glass insulation is laminated to the intermediate sheet and to the inside facing, an 18-ga. electro-galvanized (paint grip) steel back pan. The panels weigh only 7½ psf.

The steel-framed building, about 535 ft. long and 85 ft. wide by 200 ft. high, required over 6,600 of these panels on the exterior. Set in aluminum frames, like window glass, the panels are arranged in two rows between the continuous windows in each story. Generally 4½ ft. wide, those in the upper row (under the windows) are 2½ ft. deep, and in the lower row, about 3 ft. 8 in. deep.

Exterior steel columns project beyond the curtain walls and are covered with aluminum. They, too, are insulated with cellular glass. And so is the roof. In addition, windows are glazed with heat-absorbing glass.

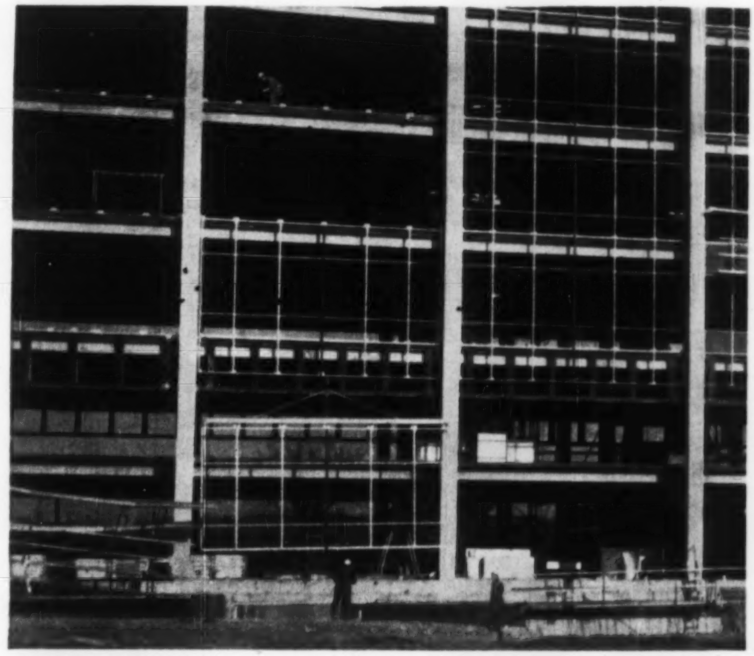
One reason for the use of this type of glass and the highly insulated wall panels is that the building is air conditioned. Conditioned air will be fed at high velocity to under-window units containing coils with hot or chilled water. The air will then be discharged in the interior at desired temperatures. The insulation will help pay for itself through savings in heating and cooling costs.

The aluminum frames in which the windows and panels are installed were erected in prefabricated sections one story high and one bay long (13x25 ft.). Equipped with a neoprene gasket around the perimeter, the panels were inserted in a rabbet in the frames. Aluminum stop moldings were then screwed into the frames along all four panel sides, pressing against the gasket to form a water-tight joint. A cover molding was placed over frame and stops to give a finished appearance to the assemblage. Cost of panels on a project this size is about $4.25 per sq. ft. exclusive of glass and frames.

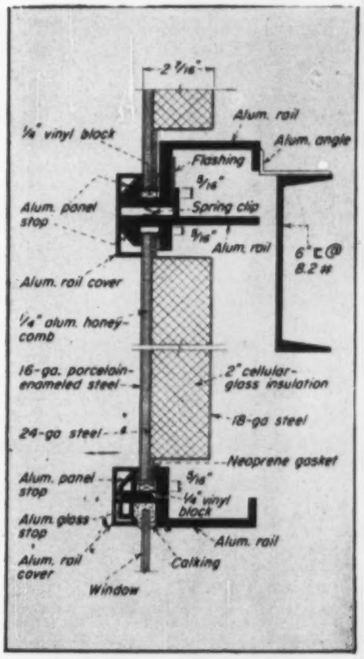
Floors are mostly cellular steel deck with concrete fill and rubber-tile finish.

In offices, luminous ceilings were created by hanging fluorescent fixtures, over continuous corrugated transparent-plastic sheets. The plastic is supported on aluminum runners which are suspended from the steel decking.

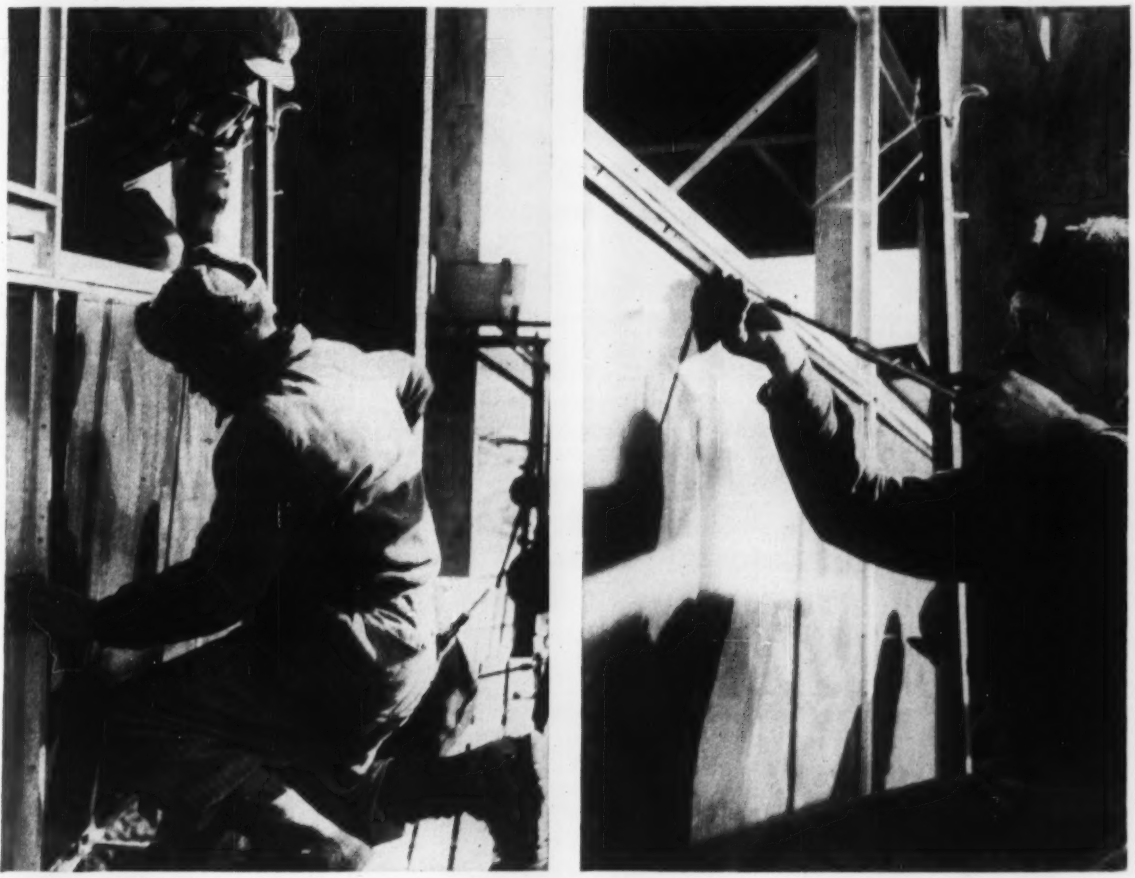
Engineering and construction are under the direction of the Ford Plant Engineering Office, J. A. MacAlarney, director. Skidmore, Owings & Merrill, New York City, are the architects. Bryant & Detwiler Co., Detroit, is the general contractor. Ingram-Richardson Mfg. Co., Beaver Falls, Pa., fabricated and installed the sandwich panels.



ALUMINUM FRAMES, one story high and one bay wide, were fastened to the steel frame of the 12-story building to hold the thin walls as well as the windows.

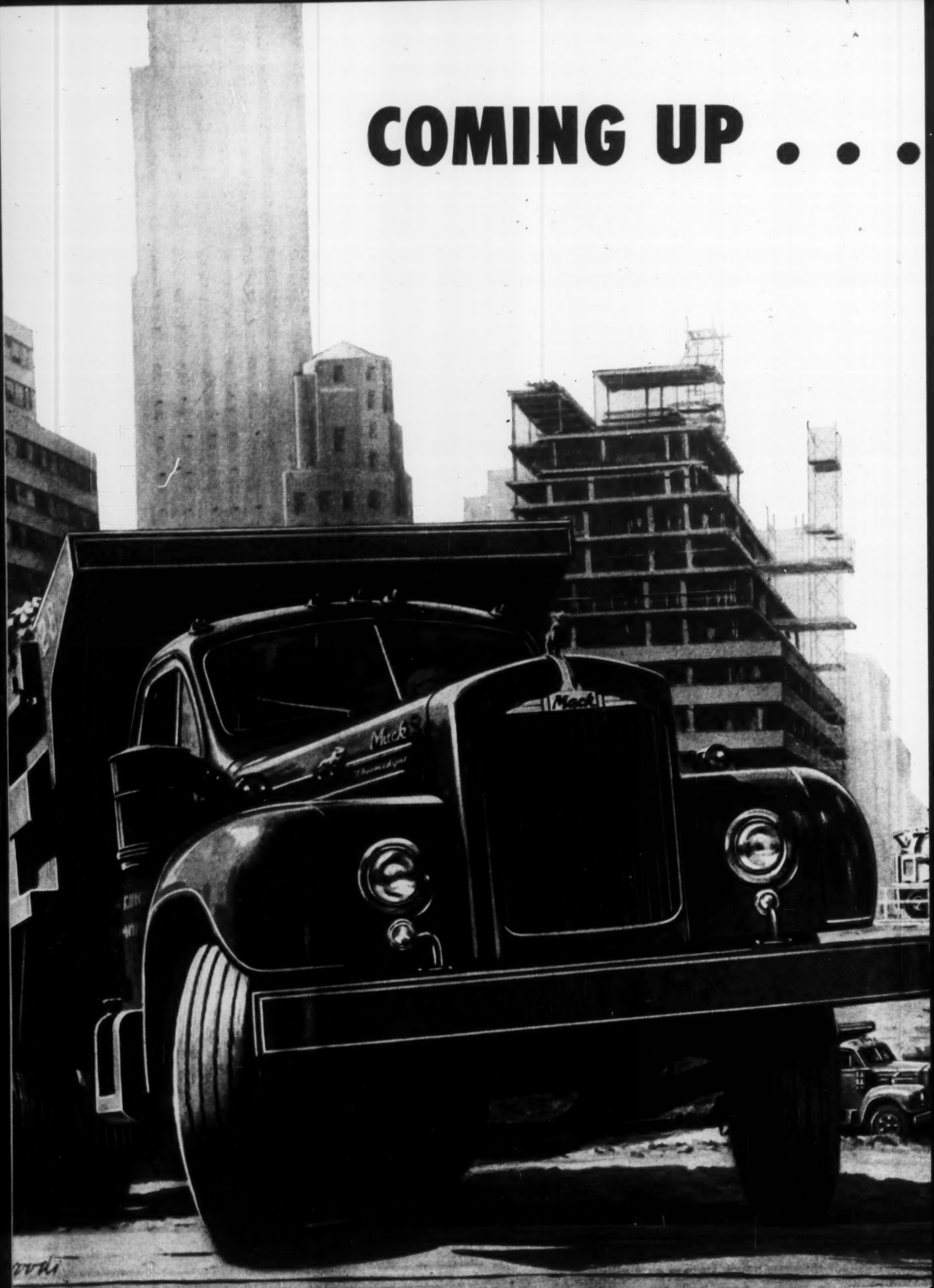

2 7/16"
Alum. rail
1/8" vinyl block
Alum. angle
Flashing
5/16"
Alum. panel stop
Spring clip
5/16"
Alum. rail
6" ⊏ @ 8.2 #
Alum. rail cover
1/4" alum. honeycomb
16-ga. porcelain-enameled steel
2" cellular-glass insulation
18-ga steel
24-ga steel
Neoprene gasket
Alum. panel stop
5/16"
1/8" vinyl block
Alum. glass stop
Alum. rail
Alum. rail cover
Calking
Window

SANDWICH PANEL has two insulating cores--metal honeycomb and cellular glass.



PORCELAIN-ENAMELED PANELS were set in a rabbet in the aluminum frames (left); then a stop molding was screwed into the frames to anchor the panels (right). A cover molding was installed later for the sake of appearance.

COMING UP . . .



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Thermodyne

the greatest year yet

By even the most conservative predictions, 1956 promises to be the greatest year yet for the construction industries.

This means that there will be even more jobs and bigger jobs to do than ever before. And wherever there's important, demanding hauling to be done, you'll find Macks on the jobs—the *Mack-sized* jobs.

When it comes to moving earth, rock, ready-mix concrete, equipment and building supplies, the construction industry knows there's nothing like Macks. For instance, the economy-champion Mack Thermodyne® Diesel engine, the sure-footed Balanced Bogie with exclusive Mack Power Divider, traditional Mack rugged construction . . . these are among the many Mack features that assure long, trouble-free life at the lowest maintenance costs. You can count on Macks to get more work done—on schedule, and at a profit.

At the beginning of the new year, isn't it a good time to remind yourself again "Can I afford *not* to use Macks?"

MACK TRUCKS **Empire State Building, New York 1, N. Y.**

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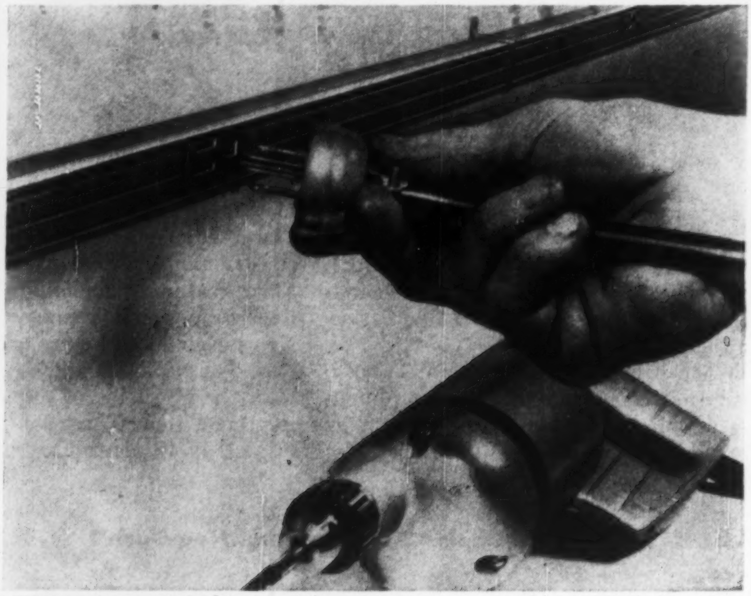
New Products



STRIP with grounded outlets on 18 in. centers, has raceway for extra wiring.

Branch Circuits Carried in Plug Strip

Electric power loads in commercial and residential circuits are everywhere heavier and heavier. One of the latest answers to the problem is a plug in strip assembly equipped with an integral raceway for No. 10 conductors. The strip provides the usual closely-spaced outlets, and at the same time acts as a conduit for branch circuits of a single-phased or three-phase current at 110 or 220 v.

Underwriters Laboratories granted approval for installing up to three No. 10 conductors in the raceway space, which is located beneath the standard plug-in strip. The additional conductors are independent of the plug-in strip harness wires.

The Type CF-4 Plug-In Strip was designed to serve commercial and industrial applications with their characteristic heavy loads, but is expected to find considerable application in residential uses, particularly in apartment buildings where air conditioning loads have strained the capacity of existing circuitry. On new installations, the raceway provides a large margin for future increases in power consumption.

Two standard versions of the new strip will offer standard, two-wire harnessed outlets, or three-wire, grounded-type receptacles. Receptacle spacing is on 6 in. or 18 in. centers. Both ends of each 6 ft strip have a ¾ in. knockout in the raceway permitting access to the branch circuit wires without special feed fittings. The strip accommodates the standard fittings for the present standard Type CF-3 Plug-In Strip manufactured by NATIONAL ELECTRICAL PRODUCTS CORP., GATEWAY CENTER, PITTSBURGH, PA.

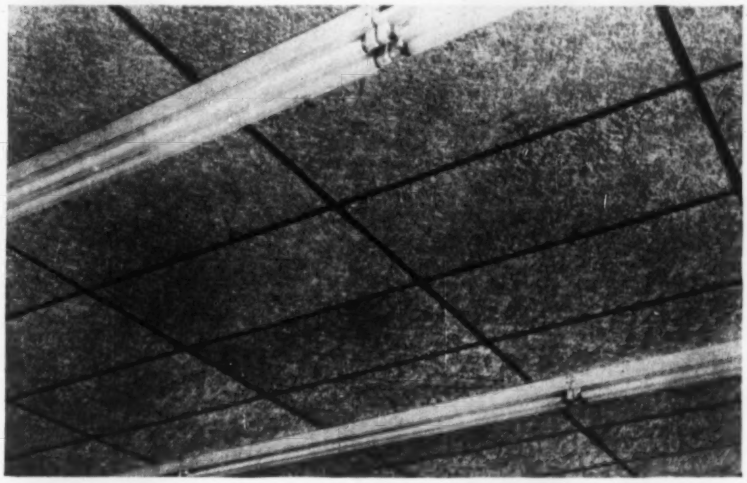
35-Ton Crane on Rubber Has Dual Front Axles

Marion Power Shovel Co. has introduced its largest roadable truck crane to date. A 35-tonner, rubber mounted, the machine has dual front axles and a power-removable counterweight for easy preparation of the unit for highway travel.

With outriggers set, the crane will lift its maximum rated load at a radius of 15 ft, yet it has a wheelbase of only 180 inches, giving good maneuverability for a unit of its capacity.

Marion designed the big truck crane for maximum legal highway size in the belief that contractors want to buy the largest, most versatile equipment they can get.

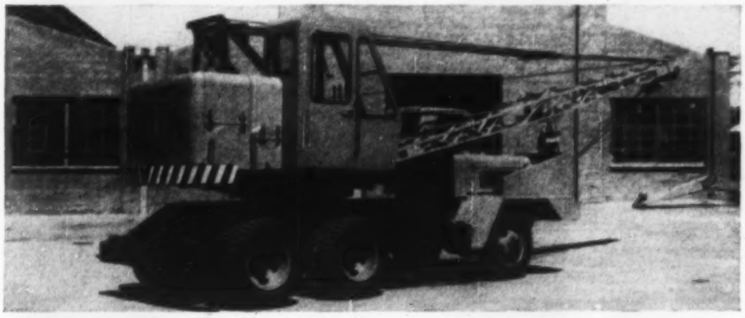
The 43-MR crane has tandem front axles for optimum weight distribution and the same control features found in the crawler mounted Marion 43-M crane. MARION POWER SHOVEL CO., MARION, OHIO.



Roof Deck Material Comes Indoors

The distance from roof to ceiling is often short. And Tectum Division of Peoples Research and Development Co. has spanned it by thinning down their roof deck panels for use on acoustical ceilings. The unusual texture of the Tectum board—wood fiber panels bonded with an inorganic, noncombustible binder—provides interesting appearance and non-glare light reflecting properties along with effective thermal insulation and a high degree of acoustical damping.

The ceiling panels are the same material used in roof decking, but have been thinned down to 1 in. Nominally 24 x 48 in. in size, the panels have a felt backing applied at the factory as an additional barrier to sound transmission. The panels are off-white in color as produced, and painting does not materially affect the acoustical qualities of the board. The panels mount with conventional techniques—nails and furring strips, or mechanical suspension systems. TECTUM DIV. PEOPLES RESEARCH AND MANUFACTURING CO., NEWARK, OHIO.



New Truck Shovels are Introduced

Four new shovel models and five new carriers have been introduced by the Quick-Way Shovel Co. The 34-year-old concern has increased its manufacturing facilities and doubled its production personnel for manufacturing the new units.

Truck shovels of the following capacities are now being produced: a 5 ton, ¼ yd; an 8 ton, ⅜ yd; a 10 ton, ½ yd; and a 12½ ton heavy duty ½ yd.

All of the new models have power up and down boom as standard equipment; chain and sprocket drives; hydraulic system and clutch controls; single station lubrication system with force feed filtered circulation and daily grease fittings centrally located in cab. QUICK-WAY TRUCK SHOVEL CO., DENVER, COLO.

Are You All Wet...

...Below Grade?

BEFORE YOUR MASONRY *WEEPS*..

USE

"EASY ONE COAT"

TO KEEP IT CLEAN AND DRY

If your below-grade masonry is inclined to be damp, paint it *now* . . . don't wait for water seepage and freezing to bring on cracks and crumbling!

TRUSCON
EASY ONE COAT

One coat is all you need! A quick, positive method of beautifying and keeping masonry dry and clean. And it's backed by TRUSCON, the world's best known name in waterproofing materials.

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A "fitting" grating for every purpose.

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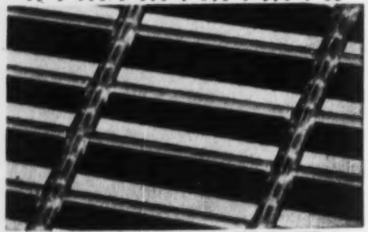

YOU GET...
Irving engineering procedures which assure precisely fabricated panels designed from your floor plan or sketch for quick, easy installation.

YOU GET...
Prompt delivery anywhere.

IRVING SUBWAY GRATING CO., INC.
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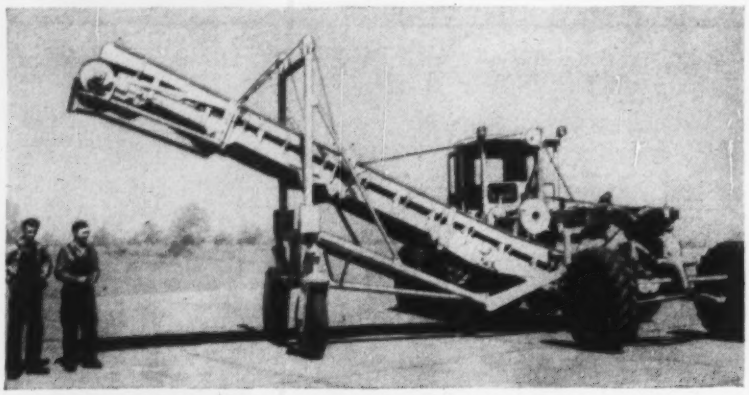


LeTourneau-Westinghouse Buys Elegraders

The entire output of the Reisser Corporation, manufacturers of the Elegrader motor grader attachment, will go to LeTourneau-Westinghouse Company, according to a contract signed recently by the two firms.

The Elegrader is a conveyor attachment designed to extend the work range of motor graders. With it, the standard grader becomes an all-purpose tool for loading, casting, terracing, ditching, widening and stripping operations. The loading units were engineered for use with Model 550, 610, and 660 motor graders manufactured by the Adams Division of LeTourneau-Westinghouse, and the Caterpillar No. 12 grader.

The largest unit of the Elegrader series will handle up to 1500 cu yd of material per hour on side casting assignments. The 660 with a 22 ft conveyor will load trucks or other hauling units at a consistent 12 yd per minute clip, according to LeTourneau-Westinghouse.

Hand Drill Feeds Coolant Through Bit

For drilling glazed tile, glazed brick, concrete granite and other hard building materials, the new Hanmole hand drill has a built in water injection system which forces cooling water down the center of the drill bit. The drill uses self sharpening diamond bits from ¼ to 2 in., operates on 110v, and draws water from any standard faucet or, when necessary, from a portable pressure tank. Molco Drilling Machines Inc., 1100-20th St., N. W., Washington, D. C.

ANNOUNCING THE POWERFUL BIG NEW BAY CITY HEAVY DUTY ONE YARDER!

DIGS BIG BITES!
BAY CITY
WORKS SMOOTHER!
DIGS FASTER!

BECAUSE of its great power and great strength and well-balanced weight, the brand new BAY CITY one yarder can really increase the speed and increase the range of your digging or materials-handling operations. The greater power (113.5 HP) supplied by the Diesel engine assures a smooth digging cycle. The bigger lifting capacity (42,000 lbs. at ten feet radius with a 40 foot boom) brings you greater work capacity. And the well-balanced weight (53,410 lbs. to 59,450 lbs.) gives you added stability to stand up under constant heavy duty service. This big new BAY CITY machine converts from a crane to a hoe, a dragline, or a shovel. As a hoe with a one-yard dipper, it reaches out 34′-3″ at ground level, and digs to a depth of 23′-3″. As a dragline, it produces a cable speed of 154 fpm and a cable pull of 20,000 lbs. As a crane, of course, it does a great job whether with hook, or clamshell.

For further information on this brand new, heavy duty 1-yd. BAY CITY, write for Bulletin 60-A.

BAY CITY Heavy Duty One-Yard Specifications:

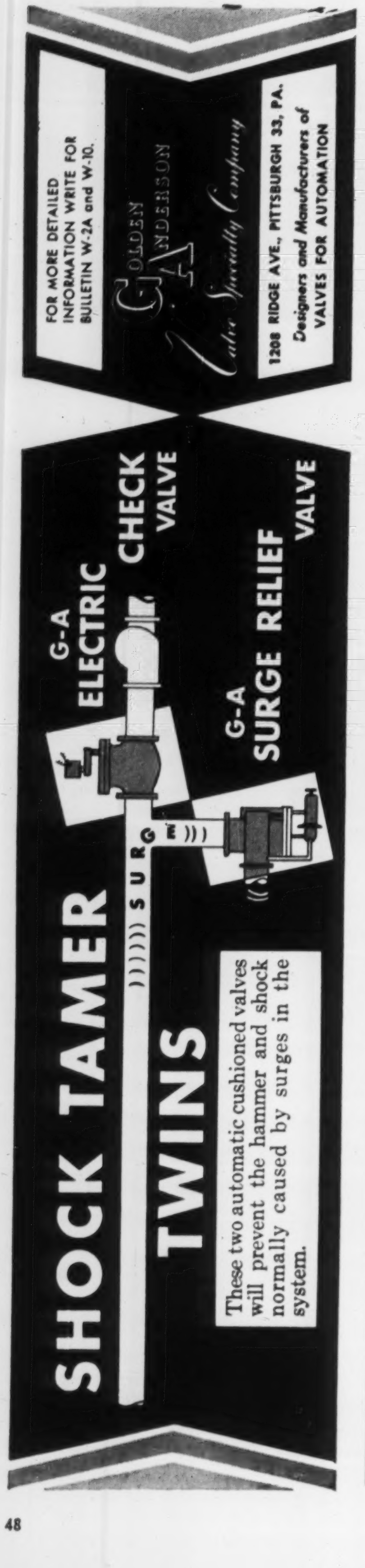
- **Power: Diesel, 113.5 HP**
- **Capacity: 21 Tons**
- **Weight as hoe: approx. 59,450**
- **Weight as crane: approx. 53,410**
- **Brake: wide band type**
- **Crawler shoes: 30″ or 34″**
- **Bases: unit cast alloy steel**
- **Drums: tandem**
- **Swingers: shoe type**
- **Convertible**

256

BAY CITY SHOVELS INC. • BAY CITY, MICHIGAN

BAY CITY

SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS


SHOCK TAMER TWINS

These two automatic cushioned valves will prevent the hammer and shock normally caused by surges in the system.

G-A ELECTRIC CHECK VALVE

G-A SURGE RELIEF VALVE

FOR MORE DETAILED INFORMATION WRITE FOR BULLETIN W-2A and W-10.

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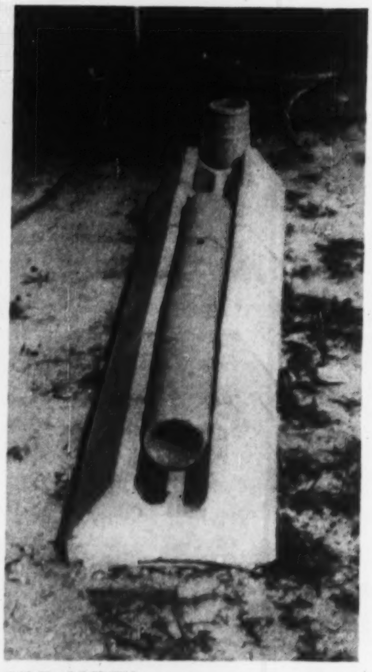
Designers and Manufacturers of VALVES FOR AUTOMATION

STANDARD-SIZE DRAIN TILES are laid on concrete cradles without mortar.



TILE JOINTS occur over open space under cradle, permit fast drainage.

Tile Cradles Reduce Septic Drainage Area

Molded cradles developed by a Florida concern have cut the cost and area of tile drainage fields for septic tank drainage and similar purposes. The box-shaped cradles support standard 4 in. tile pipe so that the pipe joints occur over the center of the cradle, permitting larger gaps and faster drainage to be used than in standard drain construction. The cradle and the tile form an inverted box when assembled so that each unit is, in effect, a 2 gallon capacity dry well.

The dry-well drain field is effective. Health authorities in some parts of Florida reportedly permit a cradle tile drain field of only 19 lineal feet compared to the 75-ft lineal requirement for standard drain fields. The method is said to be particularly good for disposal of greasy wastes, which tend to clog the finer spacing used in standard drain field tiles.

The cost of the cradled tile fields in areas near Opa Locka, Florida, is estimated to be 30¢ a lineal foot, or comparable to costs of standard tile and gravel. The block is not available from the manufacturer, except in the Miami area, but the equipment for molding the blocks can be leased for production in other areas. The cradle maker is a small machine powered by a ½ hp motor, plus sheet metal forms for molding the units. Two men can handle the output of cradles from the equipment without difficulty. After molding, the cradles are stacked, wet down, and allowed to cure for a few days before use. CRADLE TILE CO., OPA LOCKA, FLORIDA.

New Hydraulic Units For Caterpillar Grader

Three all new hydraulically operated attachments—a shiftable mold-board, a snow-plow and bulldozer mounting, and a snow wing—are now available for the Caterpillar No. 12 and No. 112 motor graders.

The shiftable moldboard has a cylinder stroke of 48 in., permitting 27 in. of travel to the right and 21 in. to the left. The new moldboards are concave in shape to provide space for the cylinder.

The snow plow and bulldozer mounting is stronger in the new design. A four position valve controls the cylinder and permits floating while providing down pressure when needed.

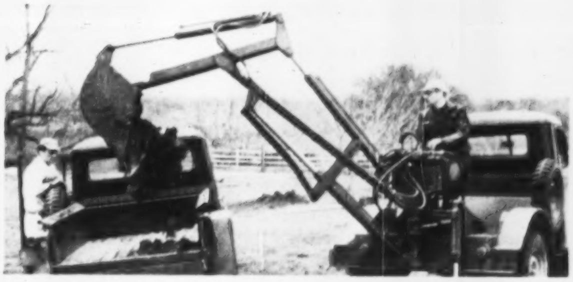
Two mast-mounted cylinders control the snow wing through a cable linkage. The action is fast to provide maximum control for moving the wing around poles and obstructions at high speed.

A new enclosed hydraulic system provides power for all attachments. Control valves for all attachments are located inside the cab. CATERPILLAR TRACTOR CO., PEORIA, ILL.

Goes anywhere! The Universal 'Jeep' is often the first equipment to reach a construction job, and the last to leave. With the extra traction of its 4-wheel drive, it takes engineers over the roughest ground for first surveys. During construction it carries men and tools wherever they are needed, on or off the road. And when the job is done, it helps speed final inspection work.

How 4-wheel drive 'Jeep' vehicles help contractors save time and money!

'Jeep' with hoist lowers lighting equipment in a bridge deck installation. Because of its light weight, the 'Jeep' can haul materials over new concrete before it is strong enough to support heavy trucks.



'Jeep' Truck with hydraulically-operated back hoe prepares foundations, digs laterals or drainage ditches, and does other jobs too big for hand digging but too small for heavy-duty earth-moving equipment.

Vehicles in the 'Jeep' family help speed work and cut costs in almost every phase of construction.

In 4-wheel drive they go up steep grades—through mud, sand and soft earth—where other vehicles can't go. They shift easily into 2-wheel drive for travel at highway speeds. With power take-off or hydraulic lift, they operate many types of equipment from dozer blades to mobile drills for soil sampling. They stand up to the toughest usage—save you valuable time on job after job. Ask your nearest Willys dealer for an on-the-job demonstration or write for information.

The 'Jeep'®

family of 4-wheel drive vehicles

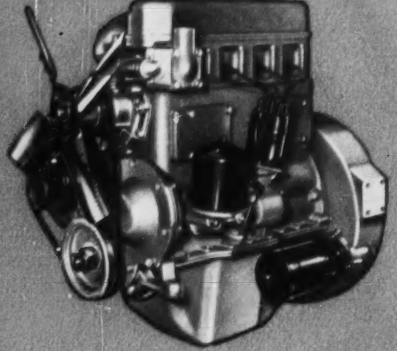
WILLYS... makers of the world's most useful vehicles

WILLYS MOTORS, INC., TOLEDO 1, OHIO

HERCULES *announces*

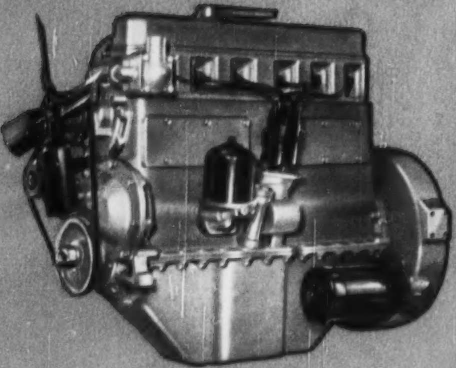
G. O. SERIES
GASOLINE OVERHEAD VALVES

G. O. 4



Model	Bore Stroke	Displ. Cu. In.	Max. H.P.
G.O. 173	3½"x4½"	173	67 @ 3200 R.P.M.
G.O. 198	3¾"x4½"	198	76 @ 3200 R.P.M.
G.O. 226	4" x4½"	226	87 @ 3200 R.P.M.

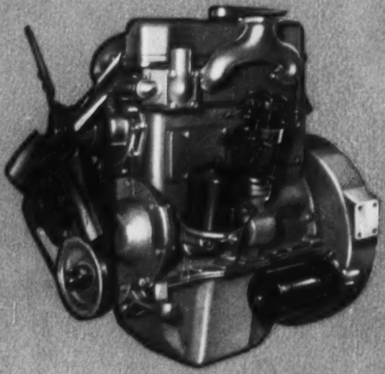
G. O. 6



Model	Bore Stroke	Displ. Cu. In.	Max. H.P.
G.O. 260	3½"x4½"	260	102 @ 3200 R.P.M.
G.O. 298	3¾"x4½"	298	114 @ 3200 R.P.M.
G.O. 339	4" x4½"	339	131 @ 3200 R.P.M.

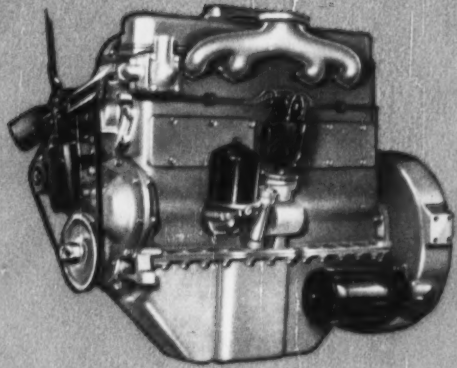
D. D. SERIES
DIRECT INJECTION DIESELS

D. D. 4



Model	Bore Stroke	Displ. Cu. In.	Max. H.P.
D.D. 173	3½"x4½"	173	50 @ 2000 R.P.M.
D.D. 198	3¾"x4½"	198	57 @ 2000 R.P.M.
D.D. 226	4" x4½"	226	65 @ 2000 R.P.M.

D. D. 6

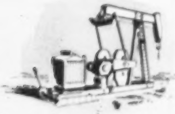


Model	Bore Stroke	Displ. Cu. In.	Max. H.P.
D.D. 260	3½"x4½"	260	75 @ 2000 R.P.M.
D.D. 298	3¾"x4½"	298	85 @ 2000 R.P.M.
D.D. 339	4" x4½"	339	99 @ 2000 R.P.M.

Marine

Construction

Material Handling



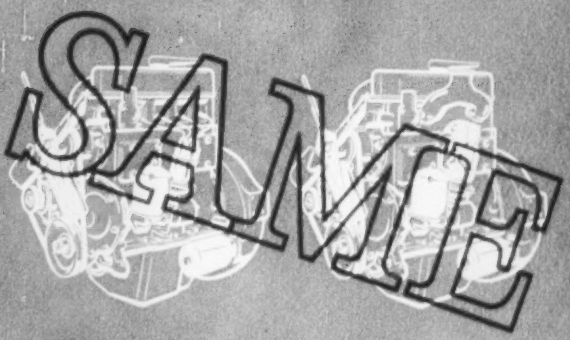
Oil Fields

Agriculture

NEW MODELS

INTERCHANGEABLE

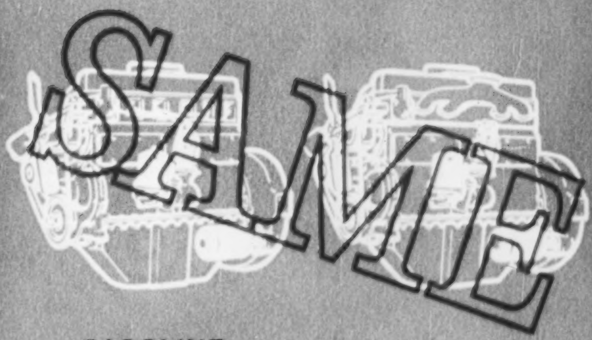
MOUNTING DIMENSIONS



GASOLINE
L.P.G.
KEROSENE
NATURAL GAS

DIESEL

MAJORITY OF PARTS



GASOLINE
L.P.G.
KEROSENE
NATURAL GAS

DIESEL

additions to the extensive line of HERCULES ENGINES

With the addition of these four new series consisting of 12 models, the Hercules Motors Corporation has increased its line of engine sizes and types to better serve the varied needs of the many different industries which require gasoline and diesel engines for their power requirements. This expansion of the Hercules line will enable manufacturers of end products to have a wider selection of engines and power units to meet individual requirements, all available from one dependable source.

Mounting dimensions of the new G.O. gasoline and D.D. diesel four cylinder engines are the same. The G.O. gasoline and D.D. diesel six cylinder engines are also interchangeable from the standpoint of mounting dimensions. Since this new series consists of parallel lines of gasoline and diesel engines, they can be used interchangeably, if desired, in any end product within the recommended engine speed ranges. Further, these engines can be built with manifolds and accessory equipment on either side, as the cylinder blocks are symmetrical and can be turned end for end.

Another important feature of these new models is the great number of parts which are interchangeable between the fours and sixes, and also, between the gasoline and diesel. This greatly simplifies the parts and service requirements. The only essential differences between these gasoline and diesel engines are cylinder heads, manifolds, pistons and fuel handling equipment.

Further information on the G.O. and D.D. series may be obtained by writing the factory.

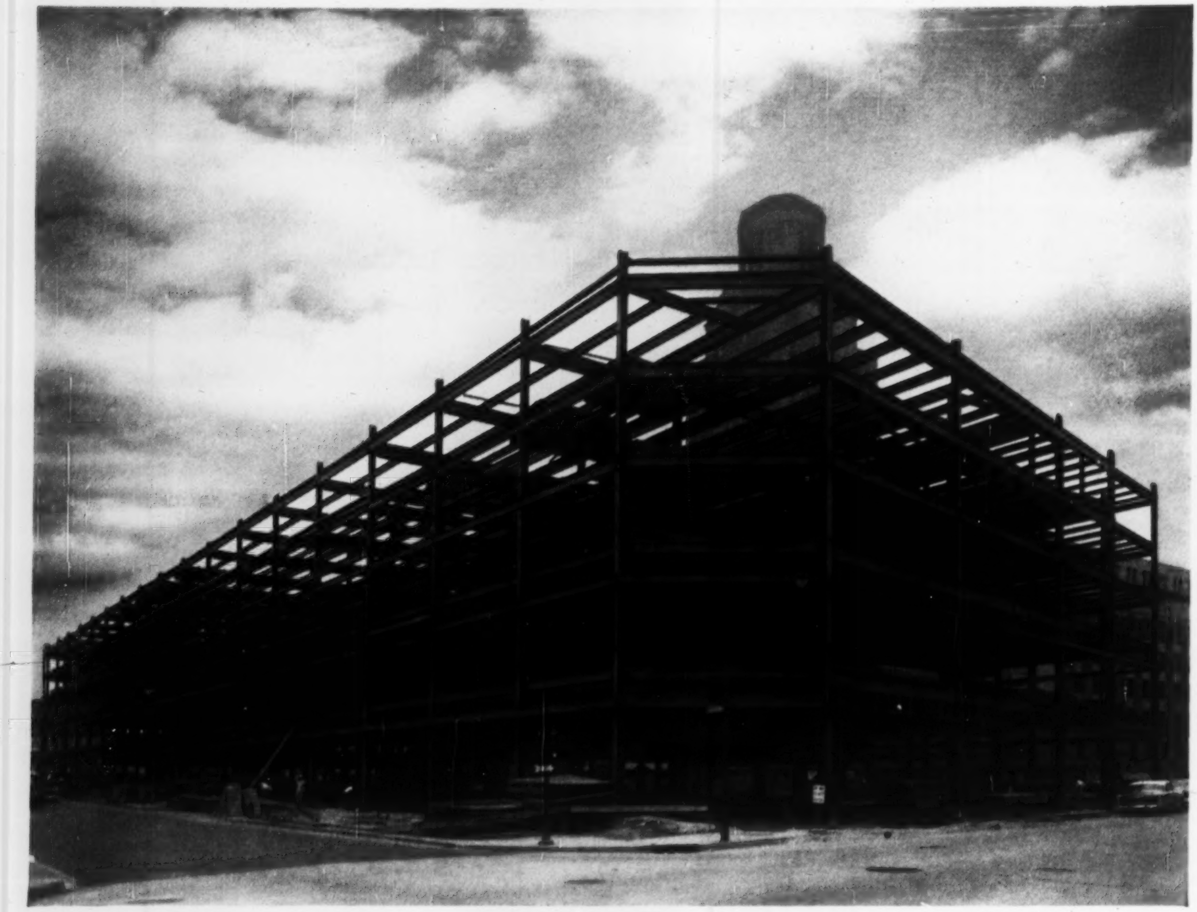
Engine Manufacturing Specialists Since 1915

Automotive

Road Building

HERCULES MOTORS CORPORATION

CANTON, OHIO, U. S. A.



3500 tons of steel erected in less than 5 weeks

This is the corner of Fifth and Federal Streets in Camden, N. J. Some weeks before this photograph was taken you would have had an unobstructed view of City Hall from this spot. Then, on July 11, 1955, Bethlehem erection crews moved in. Using three 50-ton cranes and one 60-ton crane, all with 100-ft booms, they quickly placed the steel for the five-story framework shown here, averaging well over 100 tons per working day. They completed erection of the 3500-ton structure on August 11—in less than five weeks!

Bethlehem two-man crews finished bolting within two days after the last of the steel had been put into place.

A number of factors account for the fast erection time: accurately fabricated structural steel delivered on schedule, smooth coordination on the job, and the use of A-325 high-strength structural bolts. Some 31,700 Bethlehem high-strength bolts were used for the stressed joints made in the field. This technique, pioneered by Bethlehem, proved more economical, faster and quieter than riveting; required less men, and resulted in tighter joints.

The completed building, known as the Parkade, will have shops and offices on the first two floors. The upper floors are to be used for parking. *Owner:* Nedmac Associates, Inc. *Architect:* Ziegler, Childs & Paulsen, Jersey City. *Structural Engineers:* Lars I. Moe & Son, Jersey City. *General Contractor:* Terminal Construction Corporation, Woodridge, New Jersey.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation

Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

India Completes Its Tungabhadra Dam

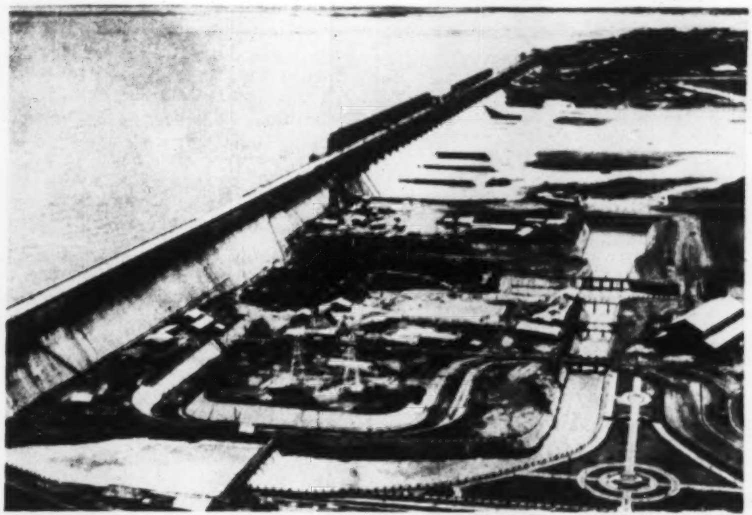
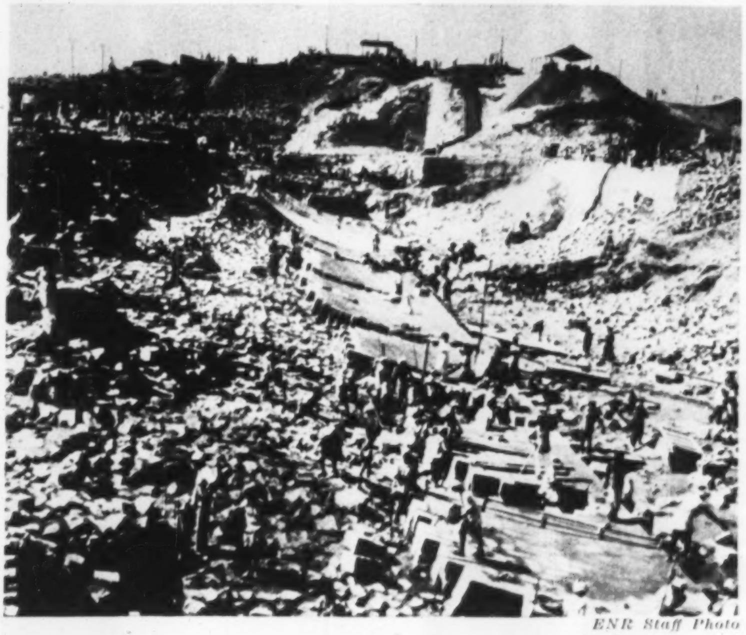


Photo From The Indian Builder

How It Looks Today



ENR Staff Photo

How It Appeared in 1951

Hand-placing enough masonry to make a dam 160 ft high and 6,000 ft long is the herculean task that 20,000 Indian construction workers, operating two 8-hr shifts a day, have recently completed in southern India. The masonry volume, exclusive of mortar, is 1.2 million cu yd, and the structure is Tungabhadra Dam, joint project of the states of Madras and Hyderabad. Although the project was begun in 1946, most of the masonry has been placed during the past 5 years. The dam includes, in addition to the solid masonry section, 1,550 of a composite section in which a gravity type masonry wall forms the upstream face of an earthdam.

Planned primarily to store 2.6 million acre-ft of irrigation water on a tributary of the Kistna River, Tungabhadra will also produce power in plants on each side of the river. In addition, power will be generated at two drops along the irrigation canals which extend for 225 miles in Madras and 140 miles in Hyderabad.

What is probably the world's largest masonry dam is also located in Madras State. It is Mettur Dam, built on the Cauvery River in 1937, and is 237 ft high and 5,300 ft long.

Vienna Conference

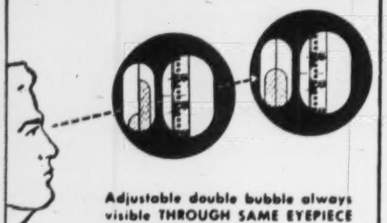
World power meeting will hear 25 American papers

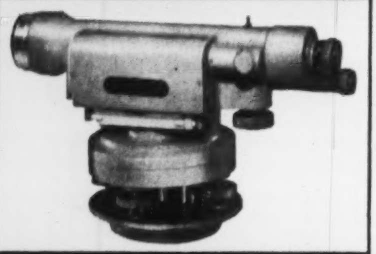
The fifth plenary meeting of the World Power Conference in Vienna (June 17-23, 1956) will hear 25 papers presented by U. S. engineers, scientists, industrialists and government representatives. This is the announcement made by Gail A. Hathaway, chairman of the United States National Committee.

General theme will be "World Energy Resources in the Light of Recent Technical and Economic Developments." This main point is subdivided into five separate areas of discussion:

- The state and development of power production and utilization in individual countries.
- Fuel preparation and conversion.
- Use of primary sources of energy.
- Purification of waste water and waste gas in the production and use of energy.
- International collaboration in the production and use of energy.

Constituting the United States National Committee are the American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, The American Society of Mechanical Engineers, American Institute of Electrical Engineers, American Institute of Chemical Engineers, American Gas Association, Association of Edison Illuminating Companies, Edison Electric Institute, Atomic Energy Commission, Bureau of Mines, Bureau of Reclamation, Corps of Engineers, Federal Power Commission, Rural Electrification Administration.





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☐ Theodolites ☐ Repair of present instruments, (any make)

NAME..........

ADDRESS..........

....

Men and Jobs

J. P. H. Perry

New Post For Perry

Former Turner official is named as consultant

John P. H. Perry, retired vice president of Turner Construction Company, has been elected a consultant to Seelye Stevenson Value & Knecht, New York City engineering firm.

Perry brings to the Seelye firm long and varied experience in the construction industry.

After his 1950 retirement from Turner, which he served for 30 years as vice president and director, he was appointed chief of construction for the Munitions Board of the Department of Defense, and in 1952 was named deputy to the Assistant Secretary of the U. S. Air Force.

In his work with the Air Force, Perry's responsibilities embraced supervision of the vast military air base construction program under way both here and abroad. Working on a world-wide basis, he helped conceive and establish the construction-management team of U. S. contractors for handling the work on the air bases in France, and spearheaded much of the planning for the Spanish air bases.

Returning to private life two years ago, Perry recently headed up the New York Lift-Slab Corporation, specializing in lift-slab construction in the New York area.

Railroad Engineer Promoted

Joseph L. Fergus, assistant chief engineer of the Nashville, Chattanooga and St. Louis Railway, has been promoted to the position of acting chief engineer. He succeeds John C. Aker, who recently retired as chief engineer after 44 years of service with the company.

Fergus started as a rodman in 1911 for the Lexington and Nashville Railroad and has worked on various phases of railroad construction, becoming assistant chief engineer in the NC & SL Nashville headquarters in 1949.

Consulting Engineer Joins C. J. D'Amato & Associates

Glennon Gilboy, consulting engineer and former professor of soil mechanics at Massachusetts Institute of Technology, has joined the staff of C. J. D'Amato & Associates, consulting engineers and architects in Boston, Mass.

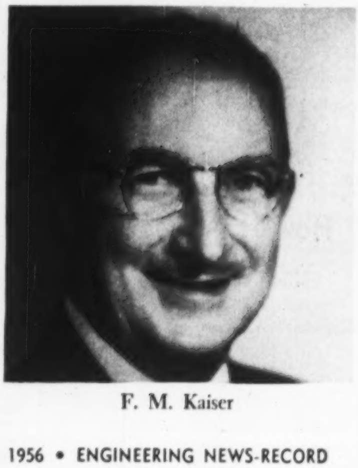
In private practice since 1937, Gilboy has worked primarily in the fields of foundations, flood control, power, irrigation and waterways. Projects with which he has been associated include Montana's Fort Peck Dam, largest earth dam in the world, and the Denison Dam, which created one of the nation's largest man-made lakes (Lake Texhoma on the Texas-Oklahoma boundary).

Gilboy, whose early career included eight years on the civil engineering faculty of M.I.T., served as special engineering advisor to the Administrator of OPA in Washington during the first part of World War II.

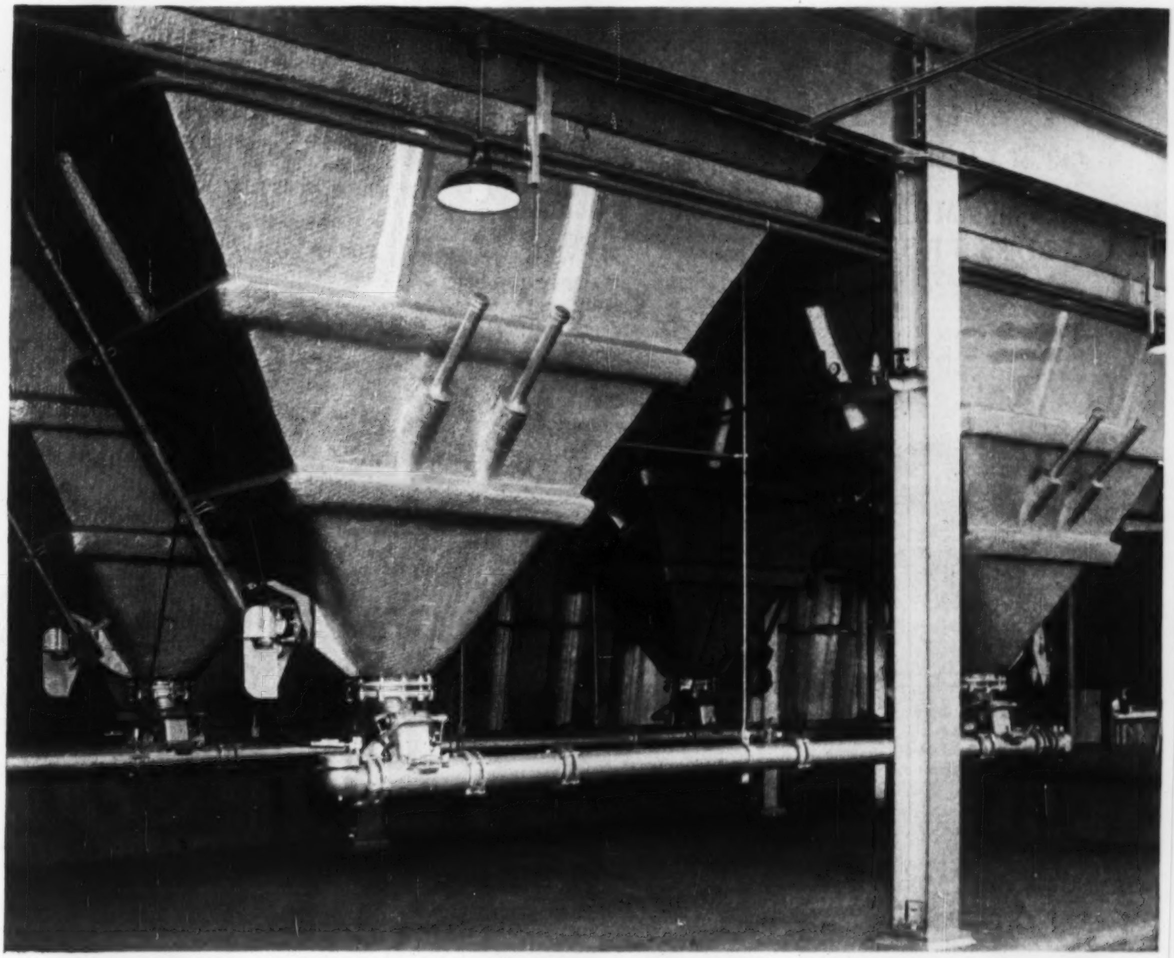
Kaiser Elected Officer Of Geo. A. Fuller Co.

Frederick M. Kaiser has been elected a vice president of the George A. Fuller Company, New York building construction firm with which he has been associated for the last 10 years.

Active in engineering and construction for more than 40 years, Kaiser has



F. M. Kaiser



HEAT LOSSES ARE MINIMIZED by K&M "Featherweight" 85% Magnesia insulation on these fly-ash hoppers at the Meramec Power Plant of the Union Electric Company of Missouri, St. Louis. It is highly efficient to 600°F. Elsewhere in the plant, "Featherweight" is applied in combination with K&M Hy-Temp for efficiency to 1900°F. Insulation contractor: Armstrong Cork Company.

Keep steam hotter–longer–at less cost–with K&M thermal insulations

K&M insulations give you highly efficient, cost-cutting insulation in every service temperature range. Whether used for maximum conservation of heat, protection of personnel, or control of room temperature, these insulations have proved their effectiveness through more than 65 years of use. K&M "Featherweight"® 85% Magnesia and K&M Hy-Temp insulations will serve for the life of your equipment. For efficiency to 1900° F., they are applied in combination, with staggered joints. This eliminates the heat loss that normally occurs in single-layer installations when expansion causes joints to open. Where severe water exposure or high humidity may be a problem, K&M "Featherweight" Water-Resistant Magnesia insulation is especially effective to 450° F.

Your K&M Distributor — who is an experienced applicator — will be glad to give you complete information on K&M thermal insulations. Or, write us.

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served as project manager for the Fuller firm on a number of large projects across the country. Among them were the recently completed $3.5-million oceanarium in Palos Verdes, Calif. (ENR, Nov. 18, 1954, p. 55) and the multi-million construction and reconstruction program begun in 1950 by the Wright Aeronautical Division of Curtiss-Wright Corporation in New Jersey.

Kaiser first joined Fuller as an estimator in the early 20's and later spent nearly two decades in private practice and in association with other firms and agencies. Following service overseas with the Corps of Engineers in World War II, he rejoined Fuller as assistant chief estimator in 1945.

Asphalt Institute Engineer Joins Firm In Baltimore

George H. Dent, former assistant chief engineer of The Asphalt Institute, joined the staff of Benjamin E. Beavin, Baltimore, Md., consulting engineering firm, this week.

Dent served for 14 years as the institute's Middle Atlantic district and division engineer, before his appointment as assistant chief engineer last year.

Earlier in his career, he was associated with the Maryland State Roads Commission as materials and bituminous engineer, and later was with the Civil Aeronautics Administration as paving engineer. While with the Maryland commission, he introduced the first mobile soils laboratory, which made possible immediate analysis of soils at construction sites.

James Dawson Will Join City Housing Authority

James A. Dawson of New York City has been appointed director of development for the New York City Housing Authority, effective next week. He will replace John P. Riley, who recently resigned to become vice president and chief engineer of Ibec Housing Corporation, an affiliate of International Basic Economy Corporation which was founded by the Rockefellers in 1947.

A civil engineering graduate of Rensselaer Polytechnic Institute, Dawson has been associated with the New York architectural firm of Harrison & Abramovitz as construction coordinator.

His 35 years of experience in large scale construction includes that of coordinator of construction for the United Nations building, 12 years as director of design and construction for the New York City Department of Parks, and 10 years with private companies.

Men and Jobs Briefs . . .

- **Associations**—The Asphalt Institute names **Vaughn Marker**, asphalt paving specialist formerly with the California Division of Highways, as district engineer for the California coastal counties . . . **Nicholas V. Poletika**, wood technologist, becomes research director of Timber Engineering Co., research affiliate of National Lumber Manufacturers Association, succeeding **Carl A. Rishell**, recently named vice president.

H. J. Harlow, Jr., president of Harlow Construction Co., is elected president of Associated Home Builders of Sacramento, Calif. . . . **Robert F. Porter** of Towson, Md., is named head of the Building Congress and Exchange of Baltimore . . . **Robert C. Sheldon** and **Nathan Schwartzman** are elected presidents of the Toledo,

M. P. Crabill

Indianapolis Water Company Names M. P. Crabill Manager

The Indianapolis Water Company has named Marshall P. Crabill, who has been superintendent of purification, to the newly-created post of manager of operations.

Crabill will be responsible for the operation and maintenance of the company's purification, pumping, and distribution departments. He joined the water company in 1933 and for the last seven years has been superintendent of purification.

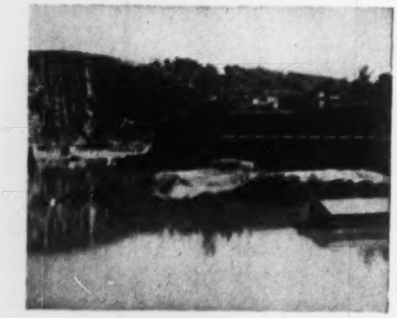
Active in the work of many professional societies, Crabill is past chairman of the Indiana section of American Water Works Association.

HOW TO HANDLE
WET JOBS

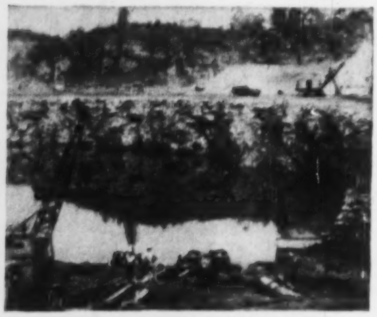
#32 of a Series

REMOVE 600 MILLION GALLONS FROM FLOODED QUARRY

Alpha Portland Cement Co. plant at Martins Creek, Pa.



HIT BY HURRICANE Diane, Martins Creek leaped its banks and flooded this quarry over 100 ft deep — shown by dotted line in photo.



WATER LOWERED 87 FT—14 ft to go — as Griffin pumps perform dependably and economically in one of the largest dewatering projects ever completed.

Griffin personnel and equipment were rushed, plans set and pumping started — all in 5 days. Quick Griffin service and reliable equipment helped Alpha resume production ahead of schedule.

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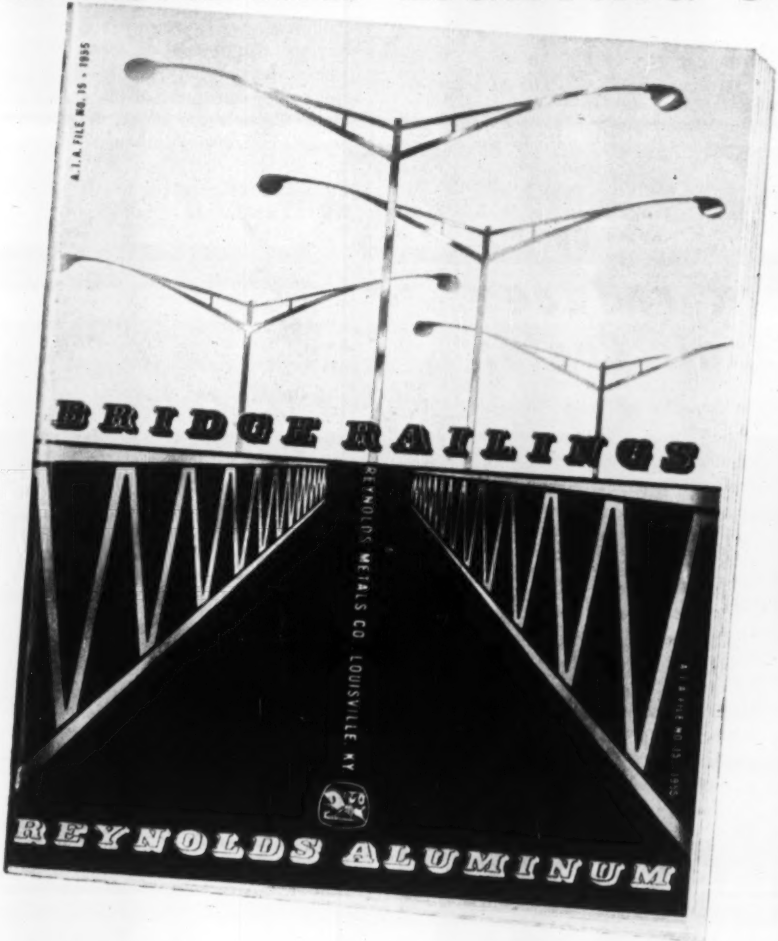
ALUMINUM BRIDGE RAILINGS and ROADWAY LIGHTING STANDARDS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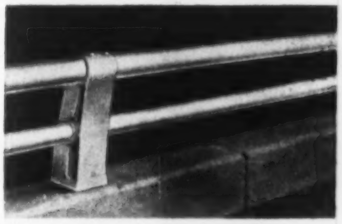
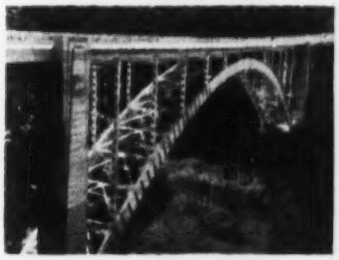
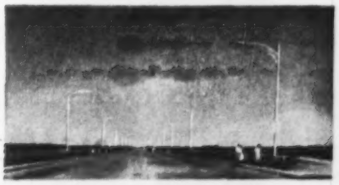
BRIDGE RAILINGS
REYNOLDS METALS CO. LOUISVILLE KY
A.I.A. FILE NO. 15 - 1955
REYNOLDS ALUMINUM



Reynolds Aluminum Guard Rails on Paseo Trafficway between North Kansas City and Kansas City, Missouri.



Reynolds Aluminum Railings on Pinto Creek Bridge, Globe, Arizona



Reynolds Aluminum Railings, Light Standards and Electrical Conduit Racks on Bay St. Louis Bridge, Miss.

The rapidly increasing preference for low-cost, low-maintenance aluminum in bridge railings makes an up-to-date technical handbook highly desirable. Reynolds new 52-page file size book includes architectural and design criteria, specifications, detailed analyses of typical installations, complete descriptions of available components, surface treatment and insulation. An appendix covers deflection impact, cost studies and the new alloy designation system. For advice on special aluminum requirements, for names of nearest fabricators and for distributors of standard Reynolds mill products, call the nearest Reynolds Sales Office listed under "Aluminum" in classified directories.

For your copy of "Aluminum Bridge Railings," please write on your letterhead to:
Architect Service,
Reynolds Metals Company,
Louisville 1, Ky.

For quick reference, see catalog $\frac{5a}{Re}$ in Sweet's Architectural File.

REYNOLDS ALUMINUM

See "FRONTIER," Reynolds great dramatic series, Sundays, NBC-TV Network.

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How DRI-POR® reduces your Pile-Repair Costs:

Lasting repair of bridge or pier piling eroded in the tidal range is now a routine procedure using the "DRI-POR" system of pile encasement.

The "DRI-POR" system utilizes a patented "K Box" which allows the repair of damaged piles below the water line "in the dry". This results in the following advantages not enjoyed by any other existing procedure.

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- Control of repair at all times

In addition, "DRI-POR" admixtures and low water-cement ratios increase density, impermeability and frost and chemical resistance of the concrete encasement.

With these many advantages, initial costs are reduced and life of repair lengthened. In other words, "DRI-POR" gives you the best repair at lowest cost. If you have a pile repair problem, it will pay you to learn more about "DRI-POR." Write for information, specifications and a pamphlet describing the repair of the 5 mile long *James River Bridge System.*

DRI-POR

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Ohio, and Buffalo, N. Y. sections of ASCE.

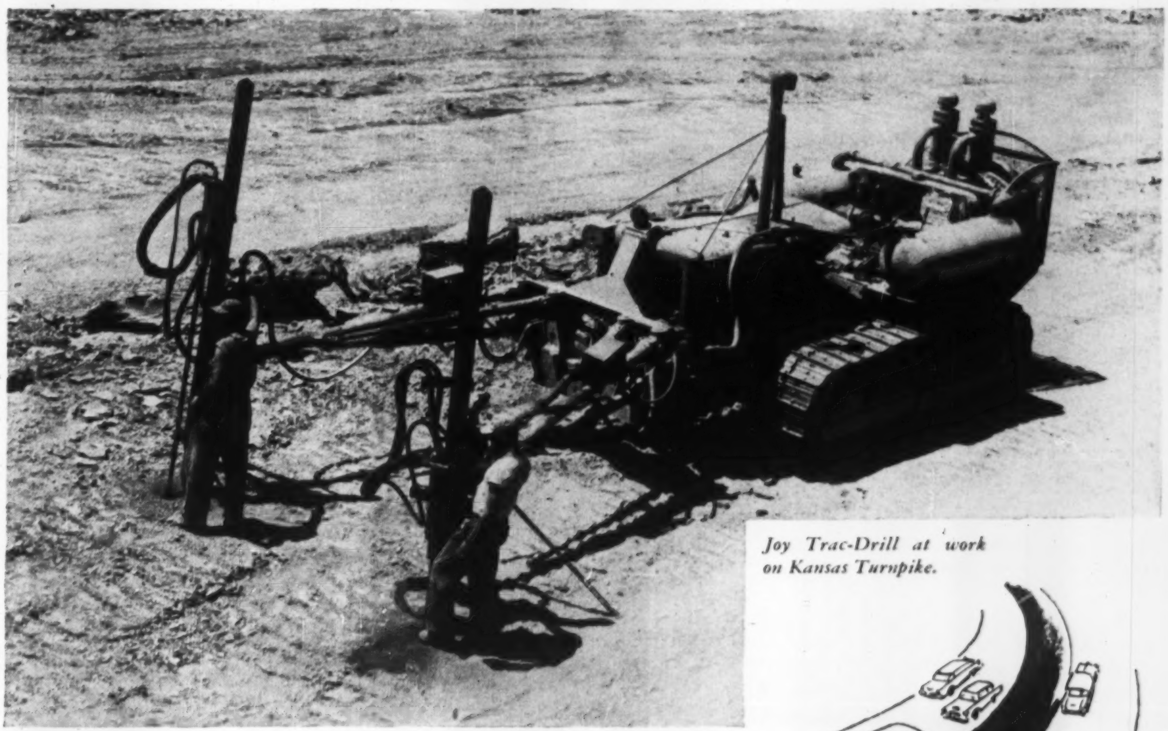
Corps of Engineers—Lt. Col. Alvin D. Wilder, Jr. becomes acting District Engineer in Sacramento, Calif., following assignment of **Col. William J. Ely,** district engineer since 1953, to the U. S. European Command . . . **Capt. Richard L. Hunt,** Korean veteran, and **Capt. William H. Kastner,** who recently returned from duty in France, are assigned to the Waterways Experiment Station in Vicksburg, Miss.

• **Careers—Newton F. Ronan,** assistant district engineer, is named superintendent of operation and maintenance, New York State Department of Public Works, succeeding **V. L. Ostrander,** who resigned last year . . . **August E. Zentgraf,** former division engineer in the Newark, N. J., Division of Sanitation, is named chief engineer for the city's Department of Public Works . . . **James E. Hulse,** of Durham, N. C., former president of Hulse Concrete Construction Co., becomes city building inspector and engineering assistant at Tarboro, N. C.

• **Business—A. L. Struven,** former construction manager for Arthur G. McKee & Co., Cleveland, Ohio, constructors of blast furnaces, steel and petroleum plants, forms his own company—Pan American Western Company, Inc., in Coral Gables, Fla., representing a number of companies in the U. S., West Indies, South and Central America . . . **James A. Reed** becomes president of J. B. Pike & Son Construction Co., Rochester, N. Y., succeeding new board chairman **John D. Pike.**

Gerard T. Shannon, who will continue to serve as general manager of the southwest office of Walter Kidde Constructors, Inc., is elected vice president of Walter Kidde Engineers Southwest, Inc., a Kidde division with headquarters in Houston, Texas . . . **R. Patrick Turner,** World War II veteran of the Corps of Engineers, becomes manager of the Conduit Division of Stillwater Clay Product Co., Cleveland, Ohio.

Education—Ovid W. Eshbach, engineering professor at Nothwestren University's Institute of Technology, is appointed acting dean of the Institute . . . **George W. Kane,** past president of the Carolinas Branch of AGC, is named to the advisory council of North Carolina State College's School of Engineering.



Joy Trac-Drill at work on Kansas Turnpike.

Kansas Turnpike

. . . another JOY DRILL JOB!

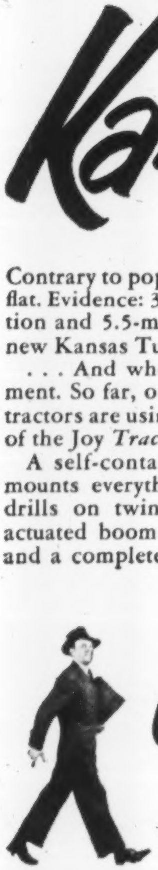
Contrary to popular opinion, Kansas is not completely flat. Evidence: 39.5-million cu. yds. of common excavation and 5.5-million cu. yds. of rock involved on the new Kansas Turnpike job.

. . . And where you find rock, you find Joy equipment. So far, on this 236-mile super-road, seven contractors are using twenty-one Joy drills—shown is one of the Joy *Trac-Drills* at work.

A self-contained drilling machine (one vehicle mounts everything), the *Trac-Drill* carries two Joy drills on twin Joy *Hydro Drill Jibs* (hydraulically actuated booms with power lift and power swing), and a complete Joy air compressor installation. The *Trac-Drill* goes anywhere a tractor goes—there's nothing to tow.

The variety of other Joy drills and mountings on the Kansas Turnpike project points up the versatility and scope of the most complete rock drill line on the market. If there's drilling in *your* contract, better put Joy on the job.

For further information, write **Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.** In Canada: *Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*



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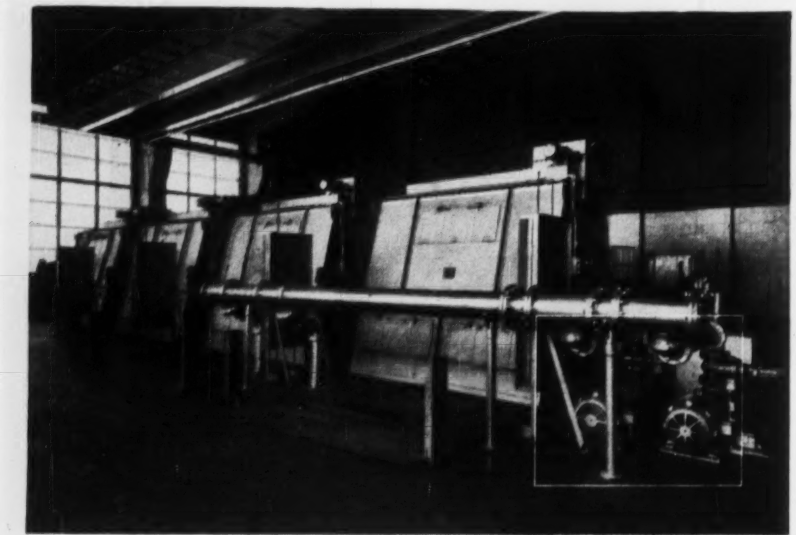
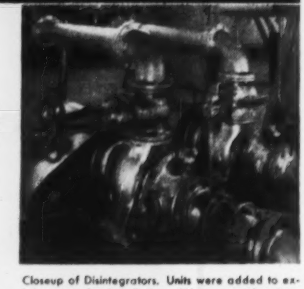


General view of screen room at Hyperion with Type S Screens at left and Disintegrators at right.

Screenings Handling Made Easy at

Los Angeles Hyperion...



Closeup of Disintegrators. Units were added to existing screening installation without expensive structural alterations.

The modern combination of Dorrco Bar Screen — Dorrco Sulzer Disintegrator is paying real dividends at Los Angeles' mammoth Hyperion Treatment Plant. The initial Disintegrator was installed late in 1953 to operate in "closed-circuit" with four Type S Bar Screens. For approximately eighteen months this one unit ground all screenings from an average flow of 249 MGD! A second unit has since been installed to serve as standby.

Essentially a low-lift, axial flow pump, the Disintegrator produces a mealy product which is returned to the plant flow without affecting subsequent treatment steps. A portion of Disintegrator discharge is used to flush screenings into the grinder. Wear results at Hyperion have been excellent and periodic inspection and blade replacement have held maintenance costs to a minimum.

If you'd like more information on this modern answer to the screenings handling problem, write for a copy of Bulletin No. 6400. Dorr-Oliver Incorporated, Stamford, Connecticut.

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Obituaries

Thomas J. Healy, 68, president of the 60-year-old contracting firm of John E. Healy & Sons, Wilmington, Del., died Dec. 31. He had served a six-year term as a commissioner for the Wilmington Housing Authority and built the Fairfax Farms development. Healy, who succeeded his father as president of the Wilmington firm, was active in the Associated General Contractors and was a member of the Allied Construction Industries of Delaware.

William A. Harris, 58, construction engineer at Fort Bragg for the Wilmington, N. C., District of the Corps of Engineers, died Dec. 27. After serving with the North Carolina Highway Department until the late 1920s, Harris became assistant highway engineer for the state of Louisiana. Later he returned to North Carolina and worked with the federal Public Works Administration. During World War II, he supervised airport construction in North Carolina and directed completion of the Seymour-Johnson Air Force Base at Goldsboro, N. C.

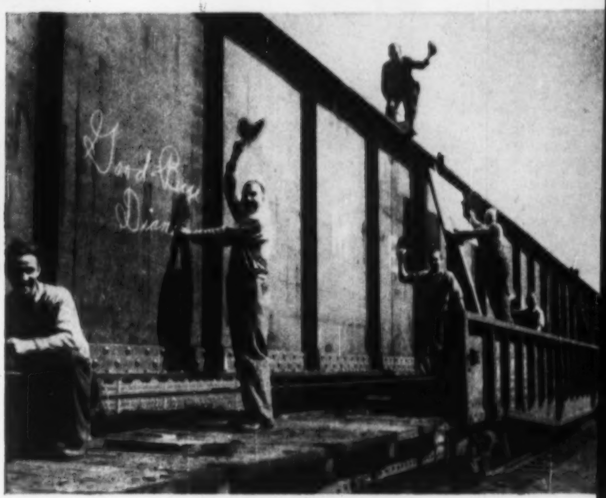
George S. White, 68, a partner in the general construction firm of Lowman and White, Elmira, N. Y., died Dec. 29. He had served with several large contracting firms before organizing his own firm.

Emmet R. Galvin, Sr., 70, assistant to the president of the Buda Division of Allis-Chalmers Manufacturing Co., Harvey, Illinois, died Dec. 27. Connected with the construction equipment industry for more than a quarter century, he had been general sales manager of Caterpillar Tractor Co., 1927-1939 and was president of Tyson Roller Bearing Corp. from 1943 to 1946. Galvin was active in the manufacturing division of the American Road Builders Association for a number of years, serving as its president in 1943-1944 and in later years as a director.

Fremont W. Slattery, 64, chief of the drainage engineering branch of the Bureau of Reclamation at Denver, died Dec. 24. His 29 years of government service included a post as assistant regional engineer of the Soil Conservation Service from 1935-1941.

William M. Bassett, structural engineer for the New England Electric system for over 35 years, died Dec. 22. He was a graduate of the Massachusetts Institute of Technology and a member of the alumni council.

LEFT: This is all that remained after a wall of water swept away a 100-year-old stone arch bridge on the Erie's mainline near Shohola, Pa., as a direct result of Hurricane Diane.



from blueprint to finished bridge in 9 days!

How American Bridge helped the Erie RR meet the emergency of disastrous Diane.

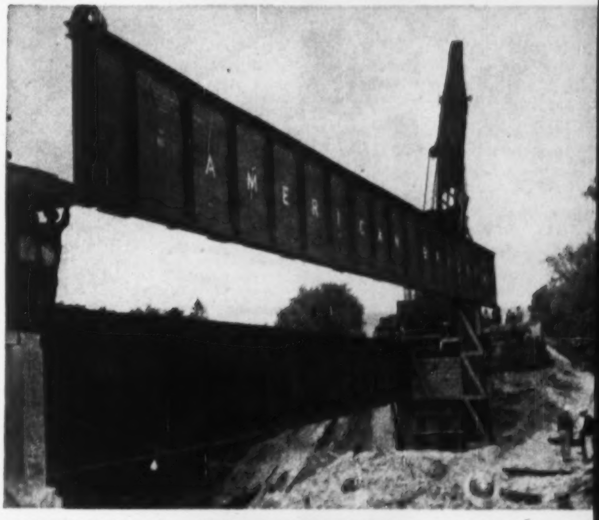
When Hurricane Diane's floods swept down the Delaware Gorge in August 1955, among the many washed-out bridges was the 100-year-old stone arch on the mainline of the Erie Railroad over Panther Creek at Shohola, Pa. *The wreckage was so complete that restoration seemed months away.*

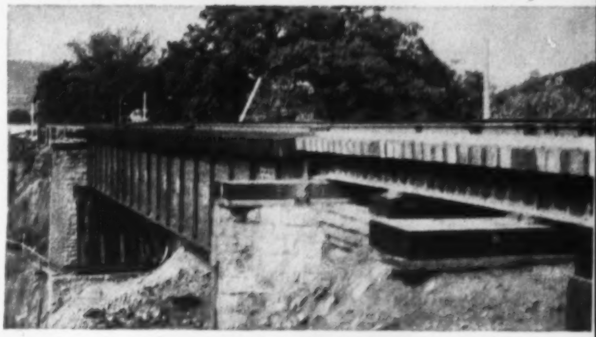
Alerted to the emergency, American Bridge engineers, cooperating with the Erie's engineers, were on the job after the flood. An inspection of existing foundations revealed that they were adequate to support a modern steel girder bridge.

Verbal orders and specifications for replacement plans were received at the Ambridge works of American Bridge on August 31st. The fabricating shops were ready to begin work when the blueprints arrived two days later, although some of the steel for the 50-ton girders was yet to emerge from the open hearths and rolling mills.

Using every means at its command to speed fabrication, American Bridge was able to ship the two 109-foot girders in a record 8 days. The job was completed at the site at 8 A.M., Saturday, September 10th, thus enabling the Erie Railroad to resume traffic over its mainline in just 9 days after American Bridge first received specifications for the big girders.

Here again is another example of how American Bridge serves the railroads. Whether you are in trouble or not, it will pay you to call us in on your bridge fabricating and erecting requirements.





INTERESTING MOTION PICTURES AVAILABLE—"Building for the Nations" and "The Suspension Bridge," two entertaining and educational films, are now available without charge to business, fraternal, and civic organizations, churches, schools and colleges. Write to Pittsburgh office for bookings.

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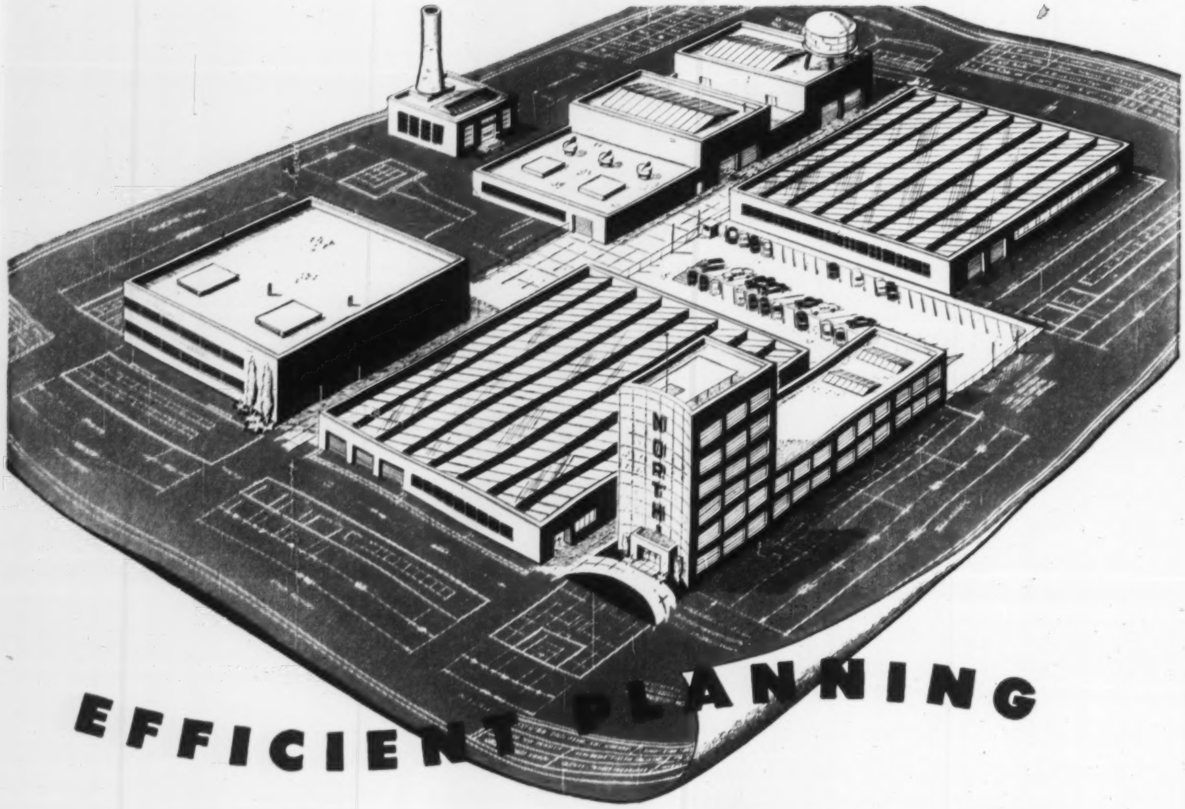
USS **AMERICAN BRIDGE**

UNITED STATES STEEL



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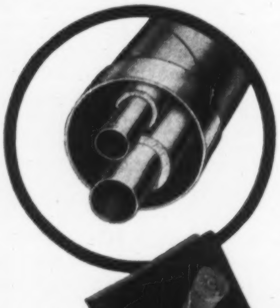


Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager

J. A. MAHONEY, M. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.

J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

† **Me., Bangor**—SERVICE CLUB—BA On Or About 1/25—U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass., service club, Dow Air Force Base, ENG-19-016-56-89, $250,000-$300,000.

† **Vt., Winooski**—SEWAGE TREATMENT PLANT—BA About 1/25—U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass., sewage treatment plant, Ethan Allen Air Force Base, ENG-19-016-56-87. Est. $140,000-$160,000. Plans deposit $10.

BUILDINGS—BA

▲ **Conn., West Hartford**—HIGH SCHOOL—BA 2/7—Town Bd. of Educ., 51 Memorial Rd., rein.-con. spandrilite walls Conrad High School, Beechwood Rd. Est. **$4,000,000.** Plans deposit $100. Nichols & Butterfield, 998 Farmington Ave., archt. Marchant & Minges, 1007 Farmington Ave., engrs. CD 10/29/54.

HEAVY CONSTRUCTION—LB & CA

† **Franchi Constr. Co.,** 815 Washington St., Newtonville, Mass. LB **$122,400.** Schedule 1, $118,000. Schedule 2, **$240,000.** Schedule 3. Est. **$150,000-$200,000.** addnl. bldgs. for special AAA facilities, Boston Area, MASSACHUSETTS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Dec. 21. CD 12/7.

Riley Stoker Corp., 9 Neponset St., Worcester, Mass. CA **$438,915.** Est. $440,000. furnish, deliver erect steam generating unit, generating station, 500 W. Water St., TAUNTON, MASS. City, Municipal Lighting Plant, 55 Weir St., Taunton, Mass. Bids Oct. 18. CD 9/29.

† **Penn Transformer Corp.,** Adams St., Cannonsburg, Pa. CA **$103,550.** Est. $100,000. main power transformer and accessories research center, ENG-19-016-56-48, HARTFORD, CONN. U. S. Eng., 857 Commonwealth Ave., Boston, Mass.

† **Associated Constr. Co.,** 1010 Wethersfield Ave., Hartford, Conn., LB **$474,000,** hangar bldg., Bradley Field. Proj. BI-CC-73, WINDSOR LOCKS, CONN. State of Conn., Dpt. P. Wks., State Office Bldg., Hartford, Conn. Bids Dec. 28. CD 12/14.

BUILDINGS—LB & CA

▲ **Consolidated Constructors, Inc.,** 807 Congress St., Portland, Me. LB **$1,113,000.** OFFICE and BANK, PORTLAND, ME. Union Mutual Life Insurance Co., 396 Congress St., Portland, Me. Bids Dec. 20. CD 12/13.

▲ **Aberthaw Constr. Co.,** 80 Federal St., Boston, Mass. LB **$1,990,000.** mfg. PLANT, BURLINGTON, MASS. High Voltage Engineering Corp., 7 University Rd., Cambridge, Mass. CD 12/14, under LB.

J. F. Rand & Sons, 57 Sudbury St., Boston, Mass. LB **$999,091.** East Intermediate SCHOOL, HAVERHILL, MASS. City, P. Bldgs., City Hall, Haverhill, Mass. Bids Dec. 22. CD 12/12.

▲† **John A. Volpe Constr. Co.,** 54 Eastern Ave., Malden, Mass., LB **$1,129,647.** permanent BARRACKS enlisted men. Naval Station, NOY 89976. Spec. 47525. NEWPORT, R. I. Dist. P. Wks. Office, First Naval Dist., 495 Summer St., Boston 10, Mass. Colletti Bros., 687 Boylston St., Boston, Mass., archts. Bids Dec. 28. CD 11/14.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

Pa., Phila.—BA 1/17—Dpt. Procurement, City Hall Annex, Bids 2535 to 2541 incl. constr. sewers various locations. CD 2/4/44.

Pa., Phila.—BA 1/23—Dpt. Procurement, City Hall Annex, grading, b. conc. c. conc. paving, bit. con. paving, asph. repaving, asph. resurf. CD 10/30/44.

† **N. Y., Rome**—DORMITORIES—BA On Or About 1/25—U. S. Eng., 111 E. 16 St., New York, Zone 3, air force facilities (FY-56) airmens dormitories Griffiss Air Force Base, Eng. 30-075-56-207. CD 10/19.

† **Azores**—WATER WELLS—BA On or About 1/31—U. S. Eng., Eastern Ocean Dist., 346 Broadway, New York 13, N. Y. const. water wells at Lajes Field, and Santa Maria Airport. ENG-30-347-56-7.

BUILDINGS—BA

▲ **N. Y., Buffalo**—HOUSING—BA 1/24—Buffalo Municipal Housing Auth., 991 City Hall, Zone 2, general constr., and foundations, incl. street and yard imprvs., heating and ventilating, electric, plumbing and elevators for Jefferson Housing Proj., $11,000,000. Plans deposit $75, James Wm. Kideney & Assoc., 433 Jackson Bldg., Buffalo, archts. CD 3/27/53.

HEAVY CONSTRUCTION—LB & CA

Phelps Dodge Corp., 40 Wall St., New York, N. Y. LB **$787,280.** total proj.; **$81,018.** Schedule 6. furnishing, delivery of insulated wire and cable Spec. No. PA-5-14012, St. Lawrence Contr. No. P32, St. Lawrence Power Proj., NEW YORK. The Power Auth. of the State of New York, 270 Broadway, New York 7, N. Y., Bids Dec. 29. CD 12/14.

Collyer Insulated Wire Distributors Co., 225 Broadway, New York, N. Y. LB **$144,356.** Schedule I, LB **$203,430.** Schedule 2, LB **$88,321.** Schedule 3. (New York).

General Electric Co., River Rd., Schenectady, N. Y. LB **$136,600.** Schedule 5. (New York).

Raisler Corp., 129 Amsterdam Ave., New York 23, N. Y. LB **$728,000.** air conditioning equip. transportation bldg., 370 Jay St., Contr. No. E-145, BROOKLYN, N. Y. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids Dec. 20.

▲ **Dravo Corp.,** Neville Island, Pittsburgh, Pa. LB **$10,565,300** (7 bidders) Contr. 49, 6 mi. intercepting sewer 48 to 72 in. diam.; LB **$8,232,300** (8 bidders) Contr. 46, 3 mi. intercepting sewer 54 to 126 in. diam., PITTSBURGH, PA. Allegheny County Sanitary Auth., 701 Civic Bldg., 200 Ross St., Pittsburgh 19, Pa. Bids Dec. 6. CD 10/24.

Harrison Constr. Co., 1101 Western Ave., Pittsburgh 33, Pa. LB **$4,226,451** (8 bidders) Contr. 47, 3 mi. intercepting sewer 36 to 60 in.; LB **$1,060,095** (4 bidders) Contr. 48, 2 mi. intercepting sewers 12 to 30 in.; LB **$304,455** (3 bidders) Contr. 29, Ohio River Interceptor sewers. (Pittsburgh, Pa.).

Ben Constr. Co. and Allegheny Contg. Co., 101 Hargrove St., Pittsburgh 26, Pa. LB **$597,411** (5 bidders) Contr. 64, intercepting sewer for Verona Proj. incl. sub-aqueous river crossing. (Pittsburgh, Pa.).

Fraser Engr. Co., 3400 Forbes St., Pittsburgh, Pa. LB **$113,765** (3 bidders) Contr. 65, Verona and Squaw Run pumping stations, and Montrose Ejector station. (Pittsburgh, Pa.).

John Matricciani, Inc., 408 S. Caroline St., Baltimore 31, Md. LB **$121,905.** Items 13, 14, 15. Contr. 467 D. S. & W., TOWSON, MD. Comrs., Baltimore Co., Court House, Towson, Md. Bids Dec. 22. CD 4/14/55.

Marocco Constr. Co., 231 S. Exeter St., Baltimore 2, Md. LB **$98,886.** item 3 and 6. (Towson, Md.).

DELAWARE—State Hy. Dpt., Hy. Admin. Bldg., Dover, Del.—**Henry C. Eastburn & Son,** Newark, Del. LB **$669,674.** Farmington through Harrington dual hy. 4.71 mi., Kent Co.

Del.—**George & Lynch, Inc.,** Delaware Trust Bldg., Wilmington, Del. LB **$252,091.** wid'n. entire roadway, 2.64 mi. resurf. with hot mix asph. Five Point to Lewes, Sussex Co.; LB **$108,883.** resurf. Rte. 14 7.93 mi., Sussex Co. Bids Dec. 21. CD 12/6.

McElwee-Courbis Constr. Co., 503 Market St., Camden, N. J. LB **$246,500.** disposal plant, MILFORD, DEL. Milford Town Council, Milford, Del. Bids Dec. 20. CD 12/6.

BUILDINGS—LB & CA

▲ **T. G. K. Constr. Co., Inc.,** 55 W. 42 St., New York, 36, N. Y. CA **$2,104,500** (4 bidders) general constr. junior high SCHOOL, 1278 Stuart St., and Filmore Ave., BROOKKLYN, N. Y. Bureau Constr., Bd. Educ., 42-15 Crescent St., Long Island 1, N. Y. CD 12/5, under LB.

▲ **Caristo Constr. Corp.,** 26 Court St., Brooklyn 2, N. Y. CA **$1,353,000.** (7 bidders) general contract, public SCHOOL 262, Underhill Ave. and Bergen St., BROOKLYN, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, 1, N. Y. CD 12/5, under LB.

▲ **Frank E. Freeman, Inc., & Mandel Bros.,** 188 Montague St., Brooklyn 2, N. Y. CA **$1,284,000.** (4 bidders) general constr. of new addn. C wing to Newtown High SCHOOL, 48-01 90 St., ELMHURST, N. Y. Director, Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 12/8, under LB.

▲ **Caristo Constr. Corp.,** 26 Court St., Brooklyn 2, N. Y. CA **$2,246,000** (8 bidders) general contract, junior high SCHOOL, 204, 37 Ave., 28 and 29 Sts., LONG ISLAND CITY, N. Y. Bd Educ., Bureau Constr., 42-15 Crescent St., Long Island 1, N. Y. SD 12/5, under LB.

▲ **Maran Constr. Co., Inc.,** 1910 Arthur Ave., New York 57, N. Y. CA **$2,409,000** (8 bidders) general constr., junior high SCHOOL, 141, W. 236 and 237 Sts. and Independence Ave., Bronx Boro, NEW YORK, N. Y. Director, Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 12/12, under LB.

† **W. J. Burns Co.,** 205 Harrison St., Syracuse, N. Y. CA **$427,500.** Est. $400,000. Army Reserve TRAINING CENTER motor vehicle storage, exterior pavement, hardstands, outside facilities, SYRACUSE, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids Dec. 20. CD 11/28.

Byron Realty Co., Inc., 100 N. Charles St., Baltimore 1, Md. Separate Contracts. Est. **$344,500.** 26 frame DWELLINGS on Gartside Ave., Liberty, Garden Park, BALTIMORE, MD.

† **Dist. P. Wks. Office,** Potomac River Naval Command, Naval Gun Factory, Wash., D. C., cancelled bids to have been opened Dec. 21 indefinitely, RADIAC BLDG. and radiological decontamination facilities, Naval Research Laboratory, Contr. NOY 93289. WASH., D. C. CD 11/10.

SOUTH

HEAVY CONSTRUCTION—BA

† **N. C., Goldsboro**—SMALL ARMS RANGE, FENCING—BA 1/17—U. S. Eng., 308 Customhouse, Wilmington, small arms range and fencing, Seymour Johnson Air Force Base. ENG-31-075-56-43. Plans deposit $2.40. CD 9/16.

† **Va., Portsmouth**—POWER SERVICE—BA 1/17—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, addnl. power service, Norfolk Naval Shipyard, NOY 91464. Spec. 49872. Plans deposit $10.

† **Ga., Augusta**—BA 1/24—Dpt. Navy, P. Wks. Officer, Naval Base, Charleston, S. C. addnl. paving, fencing of parking area, Naval Reserve Training Center, NOY 91144. Plans deposit $10.

† **Va., Chincoteague**—BARRACKS—BA 1/24—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, rehabilitation barracks E-4, Naval Air Station, NOY 93496. Spec. 49892. Plans deposit $10.

† **N. C., Weeksville**—AEROLOGICAL EQUIP.—BA 1/25—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va., install aerological equip. Naval Air Facility, NOY 91382, Spec. 48309 S/F. Plans deposit $10.

† **Va., Quantico**—MAGAZINES—BA 1/25—Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C., constr. two magazines, Marine Corps Air Station, NOY 93305. Plans deposit $10. CD 7/8, under LB.

† **North Carolina**—BA 1/31—U. S. Eng., 308 Customhouse, Wilmington, dredging in channel from Back Sound to Lookout Bight and Smiths Creek (Pamlico Co.) CIVENG-31-075-56-19. Plans deposit $1.20. CD 9/19.

† **S. C., Beaufort**—RUNWAY—BA 1/31—Dpt. Navy, P. Wks. Officer, Sixth Naval Dist., Naval Base,

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: **Before and including appointment of engineers or architects.**

BIDS ASKED: BA **(new announcements only). For full calendar, see also preceding issues.**

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB **On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.**

CONTRACTS AWARDED: CA **Except awards to low bidders previously reported in low bidder stage.**

CD dates shown are of Construction Daily issue in which last previous report was published.

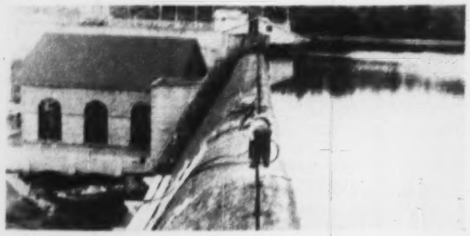
OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

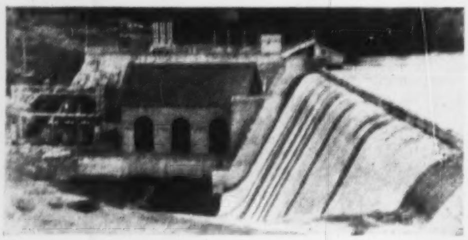
Symbols and Abbreviations Include:

†	**Federal Government**
▲	**Project of $1,000,000 or over.**
ENR	**Engineering News-Record**
CD	**Construction Daily**

For additional reports see Construction Daily.

CEMENT GUN Co. RESTORES DAM with "GUNITE"





The photographs, at left, show a large Ambursen type dam in Northern New England which has been reintegrated with "GUNITE."

The top photograph shows the spalled and eroded condition of the concrete when the Cement Gun Company crews arrived on the job. The surface was chipped back to sound concrete and reinforcing mesh applied. Then the entire downstream surface was blanketed with "GUNITE."

The bottom photograph shows the completed "GUNITE" surfacing of the dam.

This is typical of many dams which we have restored throughout the country. Many similar examples of repair, remodeling and new construction with "GUNITE" are described and pictured in Bulletin A3000. A request on your letterhead will bring a free copy by return mail.

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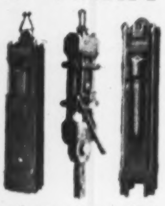

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Charleston, rehabilitation and exten. of Runway 14-32, Marine Corps Auxiliary Landing Field, NOY 91120. Plans deposit $70. CD 6/30.

† La., **Shreveport**—AIRFIELD PAVING—BA 2/15—U. S. Eng., P.O. Box 867, Little Rock, Ark., airfield paving, lighting, Barksdale Air Force Base, ENG-03-05-56-60.

† S. C., **Charleston**—WATERFRONT FACILITIES, UTILITIES—BA 2/15—Dpt. Navy, P. Wks. Officer, Naval Base, Charleston, waterfront facilities, utilities, U. S. Naval Minecraft Base. NOY 94250. Plans deposit $80. CD 7/15/49.

† Tenn., **Smyrna**—HANGAR—BA On Or About 2/28—U. S. Eng., 306 Federal Office Bldg., Nashville, maintenance hangar exten., ENG-40-058-56-23.

BUILDINGS—BA

† Va., **Little Creek** — BUILDING REHABILITATION — BA 1/17—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Zone 11, rehabilitation Bldg. 2085, Naval Amphibious Base. NOY 93488. Spec. 49884. Plans deposit $10.

Ga., **Fitzgerald** — SCHOOLS — BA 1/19 — State School Bldg., Aut Kemper Bldg., 41 Exchange Pl. S.E., Atlanta, cafeteria addn. to Lynnwood Elementary School, elementary school bldg. for Cotton Mill School and addns. to Queensland School Center, Ben Hill Co. Plans deposit $50. Lauren Parrott, 412 E. Central Ave., archt.

†. Va., **Fort Lee**—BUILDING ALTERATIONS—BA 1/24—Dist. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, Building T-4010 alterations, Marine Corps Reserve Training Center, NOY 91439. Spec. 48331. Plans deposit $10.

† Va., **Quantico**—CHAPEL, etc.—BA 2/8—Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash. D. C., const. chapel, administration bldg., Marine Corps School and Services. NOY 93288. Plans deposit $60. CD 12/8, under LB.

HEAVY CONSTRUCTION—LB & CA

† **U. S. Eng.**, Foot of Front St., Norfolk 1, Va., cancelled bids to have been opened Dec. 20, unmanned gap filler. ENG-44-110-56-14. HALLSBORO, VA. CD 12/5.

† **Brewer Co.**, 3810 N. W. 21 St., Miami, Fla. LB **$425,460.** airfield paving, lighting, Homestead Air Force Base, ENG.-08-123-56-33, HOMESTEAD, FLA. U. S. Eng., P.O. Box 4970, Jacksonville, Fla. Bids Dec. 20. CD 11/16.

▲ **LOUISIANA**—State Hy. Dpt., Highway Office Bldg., Baton Rouge,

La.—**Hyde Constr. Co.**, Box 687, Jackson, Miss. LB **$1,680,260.** (6 bidders) grading 9.097 mi., Archie-Holloway Hy., La. Rte. 28, S.P. 74-03-04 and 74-02-10, LaSalle and Rapides Parishes.

La.—**Louisiana Paving Co., Inc.**, Kenner, La. LB **$620,707.** (3 bidders) c. conc. 0.074 mi., Baton Rouge Expressway with grade separations at N. 21 St. and N. 22 St., S.P. 714-01-86, F.A. Proj. U 414 (3), East Baton Rouge Parish.

La.—**W. R. Fairchild Constr. Co.**, Box 31, Hattiesburg, Miss. LB **$802,969.** (5 bidders) c. conc. 2.517 mi., Covington Bypass, State Rte. 34, S.P. 714-02-23, St. Tammany Parish.

La.—**W. R. Aldrich & Co.**, 2493 Baywood Ave., Baton Rouge, La. LB **$451,181.** c. conc. 1.869 mi., South State St. and Charity St. (Abbeville), La. Rtes. 82 and 14, S.P. 194-07-15 and 55-06-13, Vermilion Parish.

La.—**Anderson & Courtney,** Box 565, Amite, La. LB **$156,984.** bit. surf. tr. 5.955 mi. Union Grove-Lee Hy., La. Rte. No. 40, S.P. 269-09-03, St. Tammany Parish; LB $207,831. (3 bidders) bit. surf. tr. 9.932 mi., Georgeville-Greensburg Hy., La. Rte. 441, S.P. 260-09-03, St. Helena Parish.

La.—**Barber Bros. Co.**, 2636 Dougherty Dr., Baton Rouge, La. LB **$260,297.** (3 bidders) bit. surf. tr. 6.315 mi., Geismar-Gonzales Hy., La. Rtes. 73 and 429, S.P. 77-01-03 and 77-30-06, F. A. Secondary Proj. S 39 (1), Ascension Parish.

La.—**Barworth, Inc.**, Box 3215, Baton Rouge, La. LB **$183,698.** (4 bidders) bit. surf. tr. 5.159 mi., Phillips-Maringouin Hy., La. Rte No. 76, S.P. 824-12-08, Iberville Parish.

La.—**Bedsole & Shetley,** Box 192, Mansfield, La. LB **$124,068,** (3 bidders) bit. surf. tr. 5.55 mi., Clear Lake-Abington Hy., La. Rte. 509, S.P. 105-02-04 and 105-03-02, DeSoto and Red River Parishes.

La.—**E. A. Caldwell,** Box 1327, Baton Rouge, La. LB **$298,337.** (9 bidders) bit. surf. tr. 8.602 mi., Melville-Bayou Current Hy., La. Rte. 105, S.P. 144-02-17, F. A. Secondary Proj. S 307 (1), St. Landry Parish.

La.—**Harvey Core,** 1408 Horseshoe Dr., Alexandria, La. LB **$208,729.** (3 bidders) aggregate type 3.359 mi., Crowley-Ebenezer Hy., La. Rte. 886, S.P. 213-01-01, Acadia Parish.

La.—**Hall & Holland,** Montgomery, La. LB **$450,340.** (6 bidders) bit. surf. tr. 10.612 mi., St. Landry-Lone Pine Hy., La. Rte. 115, S.P. 372-03-06, Evangeline Parish.

La.—**LeBlanc Bros.**, 702 La. National Bank Bldg., Baton Rouge, La. LB **$141,884.** (3 bidders) bit. surf. tr. 3.58 mi., Brittany Rd., La. Rte. 431, S.P. 267-01-02 and 267-02-10, Ascension Parish.

La.—**Normand Bros.**, Marksville, La. LB **$79,479.** (5 bidders) bit. surf. tr. 3.571 mi. Marksville-Red River School Hy., La. Rte. No. 452, S.P. 143-01-07, Avoyelles Parish.

La.—**W. H. Patterson & Co.**, Box 2229, Baton Rouge, La. LB **$131,191.** (2 bidders) bit. surf. tr. 3.598 mi., Bayou Blue-Grosse Tete Hy., La. Rte. 77, S.P. 219-02-07, F. A. Secondary Proj. S 272 (1), Iberville Parish; LB $107,590. bit. surf. tr. 4.068 mi., Toomay-Starks Hy., La. Rte. 109, S.P. 187-01-09, Calcasieu Parish.

La.—**Pankey Wheat,** Box 247, Oakdale, La. LB **$218,389.** (5 bidders) bit. surf. tr. 6.063 mi., Elton-Oberlin Hy., La. Rte. 26, S.P. 54-01-06, F. A. Secondary Proj. S 229 (1), Allen Parish.

La.—**L. M. Winford,** Box 564, Minden, La. LB **$109,364.** (2 bidders) bit. hot mix 0.86 mi., street in Springhill, La. Rte. No. 7, S.P. 86-02-11, Webster Parish. Bids Dec. 21. CD 12/1 and 12/15.

▲ **Robert Simmins Constr. Co.,** Barrett Ave., Louisville, Ky. CA **$3,506,000.** general constr., garbage incinerator; CA **$630,967.** mechanical work. LOUISVILLE, KY. City, City Hall, Louisville, Ky. Bids Dec. 30, awarded Dec. 24. CD 12/5, under LB.

BUILDINGS—LB & CA

† **Frank H. Conner Co.,** 3500 Westminister Ave., Norfolk, Va., LB **$321,407.** USAR TRAINING CENTER, ENG-44-110-56-16, ROANOKE, VA. U. S. Eng., Foot of Front St., Norfolk 1, Va. Bids Dec. 22. CD 12/8.

Farnsworth & Chambers, Box 332, New Orleans, La. CA **$846,000.** 6 story brick, masonry Maison Blanche BLDG. addn., NEW ORLEANS, LA. Maison Blanche Co., 901 Canal St., New Orleans, La. CD 12/9, under LB.

† **U. S. Atomic Energy Comn.,** P.O. Box 3, Oak Ridge, Tenn., rejected bids Nov. 29, Phase II of the multicurie fission products PILOT PLANT in Bldg. 3517. Inv. No. 401-56-44, LB **$637,000.** OAK RIDGE, TENN. CD 12/7, under LB.

Melson Contrs. Inc., Shelbyville, Tenn., CA **$950,000.** est. $1,100,000. Senior HIGH SCHOOL, TULLAHOMA, TENN. City School Bd., Tullahoma, Tenn. Awarded Dec. 18. CD 11/30, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

† **Wis., Madison**—ROCKET STORAGE BLDG.—BA on or about 2/2—U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill., rocket storage bldg., Truax Air Force Base, Eng. 11-032-56-31. CD 6/27/51.

† **O., Dayton**—STEAM MAINS—BA 2/2—U. S. Eng., 830 W. Broadway, Louisville, Ky., exten. of steam mains, underground steam distr., approx. 1,420 lin. ft. Wright Patterson Air Force Base. Eng. 15-029-56-54. CD 8/29.

† **O., Dayton**—DINING HALL—BA 2/14—U. S. Eng., 830 W. Broadway, Louisville, Ky., 1 story 14,430 sq. ft. dining hall, Wright Patterson Air Force Base. Eng. 15-029-56-11. est. $300,000.

▲† **O., Dayton**—OFFICERS QUARTERS—BA 2/16—U. S. Eng., 830 W. Broadway, Louisville, Ky., 3 story, 80,000 sq. ft. bachelor officers quarters, Wright Patterson Air Force Base. Eng. 15-029-56-12. est. $1,000,000. CD 12/10/52.

† **O., Wilmington**—CNR FACILITIES—BA on or About 3/1—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., const. CNR facilities, Clinton County Air Force Base. ENG-46-022-56-7. CD 10/19, under LB.

† **O., Wilmington**—TECHNICAL TRAINING BLDG.—BA On Or About 3/15—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., technical training bldg., Clinton County Air Force Base. ENG-46-022-56-13. CD 8/22.

BUILDINGS—BA

O., Akron—HIGH SCHOOL—BA 1/18—Coventry Local School Dist. Bd. Educ., 1135 Portage Lakes Dr., Zone 19, Junior High School. Wagner & Luxmore, 200 Permanent Bldg., archts. CD 12/8, under LB.

HEAVY CONSTRUCTION—LB & CA

▲† **Farnsworth & Chambers,** 3018 Leeland St., Houston, Tex., CA **$3,284,705.** est. $3,142,767, research facilities and aeronautical laboratory. Wright Patterson Air Force Base, DAYTON, O. U. S. Eng., P. O. Box 59, Louisville 1, Ky. Bids Dec. 6. Awarded Dec. 19. CD 12/9, under LB.

Arcari Constr. Co., Allen Park, Mich. CA **$333,096.** West Marion sewer constr., MARION, IND. City, Marion, Ind.

Dunigan Bros., Jackson, Mich. LB **$441,920.** Est. $500,000. (11 bidders) sewage treatment plant, ALBION, MICH. City, John P. Bentlu, clk., City Hall, Albion, Mich. Bids Dec. 14. CD 11/4.

BUILDINGS—LB & CA

B. G. Danis Co., 1518 E. First St., Dayton, O., CA **$584,012,** general constr., Gardendale Grade SCHOOL, DAYTON, O. Bd. Educ., 348 W. First St., Dayton, O. Bids Dec. 13. CD 11/22.

Kent Bros. Const. Co., 22 E. Gay St., Columbus, O. CA **$524,550,** general constr. Thomas Ewing Junior HIGH SCHOOL, LANCASTER, O. Bd. Educ., Lancaster, O. CD 5/10/54.

Joseph B. Haverstick, 2412 Far Hills, Dayton, O., CA est. **$500,000.** MOTEL, swimming pool in center, intersection Ohio Turnpike and Toledo Expressway, TOLEDO, O. Holiday Inn Motels, c/o Jose. B. Haverstick, 2412 Far Hills, Dayton, O.

George Bahre Co., 3519 Southeastern St., Indianapolis, Ind. CA Est. **$350,000.** 1 story 60,000 sq. ft. grocery distribution WAREHOUSE, South Emerson and Pennsylvania R. R., INDANAPOLIS, IND. Allied Grocers of Indiana, 1039 E. Ninth St., Indianapolis, Ind.

Arnold Lies Co., 151 New York Ave., Aurora, Ill. CA **$387,037.** Y. W. C. A. BLDG. addn, remodeling present bldg., 31 Downer Place, AURORA, ILL. Young Women's Christian Assoc., Sheila Bressman, exec. dir., 31 Downer Place, Aurora, Ill. Bids Oct. 26, awarded Dec. 14. CD 11/16, under LB.

High Ridge Homes, 480 Ridge Ave., Highland Park, Ill. Own Forces. **$380,000;** 20 HOMES, HIGHLAND PARK, ILL.

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Shaf Home Builders, Inc., 4866 W. Main St., Skokie, Ill. Own Forces. **$500,000.** 25 HOMES, MORTON GROVE, ILL.

The Christman Co., 408 Kalamazoo Plaza, Lansing, Mich. CA **$449,875.** nurses HOME, Ingham County Chest Hospital, LANSING, MICH. Bd. Suprvs., Ingham Co., Mason, Mich. Bids Dec. 8. CD 12/1.

▲ **Barnes Constr. Co.**, 1310 Wallen St. S. W., Grand Rapids, Mich. CA **$1,401,800.** general constr. four CUSTODIAL BLDGS., Mount Pleasant State Home & Training School, MOUNT PLEASANT, MICH. State, A. N. Langius, dir., State Bldg. Dpt., Lansing, Mich. Bids Dec. 15. CD 11/29.
United Piping & Erecting Co., 3012 First St., Lansing, Mich. CA **$448,147.** mechanical work. (Mount Pleasant, Mich.)

C. D. Barnes Assoc., 3437 Eastern St. S. E., Grand Rapids, Mich. LB **$404,520.** general contract, two elementary SCHOOLS, PLAINWELL, MICH. City, Plainwell School Dist., Plainwell, Mich. Bids Dec. 20. CD 12/1.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† **N. D., Minot**—ROADS—BA 1/19—U. S. Eng., 1709 Jackson St., Omaha, Neb., roads and utilities extens. Minot Air Force Base, Inv. 25-066-56-22. CD 12/12.

† **Tex., Fort Worth**—LIGHTING—BA 1/19—U. S. Eng., 100 W. Vickery Blvd., taxiway lighting, Carswell Air Force Base, ENG-41-443-56-29. CD 10/31/51.

† **Missouri**—BA 1/23—U. S. Eng., 420 Locust St., St. Louis, Zone 2, constr. Cape Girardeau Flood protection Cape Girardeau, Proj. Item I and II, incl. sewers, outlet, structures, levees, CIVENG 23-065-56-51. CD 12/21.

† **Tex., Abilene**—RUNWAY EXTEN.—BA About 1/24—U. S. Eng., 100 W. Vickery Blvd., Fort Worth, runway exten. Abilene Air Force Base, ENG-41-443-56-55. CD 8/25.

† **Tex., Kelley Air Force Base**—TURFING—BA 1/25—U. S. Eng., P.O. Box 1229, Galveston, runway and taxiway turfing, ENG-41-243-56-40.

† **Tex., Valentine Air Force Station**—ROAD—BA 1/25—U. S. Eng., P.O. Box 1538, Albuquerque, N. M., access road, streets, site grading, oxidation ponds, etc., ENG-29-005-56-42. CD 9/28.

† **S. D., Rapid City**—PAVEMENTS—BA On Or About 1/26—U. S. Eng., 1709 Jackson St., Omaha 2, Neb., Airfield Pavements, incl. (a) 3,000 ft. R/W exten. with parallel T/W, approx. 620,000 cu. yds. excavation, 103,000 tons granular filter course, 88,000 cu. yds. Portland c. conc., 135,000 tons aggregate base courses, 18,000 tons high-type b. conc., subdrain and storm drain sys., marking and stripping, topsoiling, seeding and maint., shoulder paving adjacent to new and existing airfield pavements; (b) airfield lighting sys.; (c) approach zone grading. Ellsworth Air Force Base. ENG-25-066-56-31.

▲† **Tex., Abilene**—HOUSING—BA 1/26—Base Procurement Office, Carswell Air Force Base, Fort Worth, Unit 1, 484 housing units, Inv. No. 41-613-56-61. Plans deposit $100; Unit 2, 460 housing units, Inv. No. 41-613-56-62. Plans deposit $100. at Abilene Air Force Base. Addnl. plans and specifications may be purchased from Associated Architects & Engineers, P. O. Box 1175, Abilene. CD 8/25.

† **Tex., El Paso**—WAREHOUSE—BA About 1/27—U. S. Eng., P.O. Box 1538, Albuquerque, N. M., warehouse addn.; new 80x140 ft. masonry warehouse; 62x130 ft. masonry cold storage bldg.; fire station addn.; one 5,000 gal. underground kerosene storage tank with connections to existing pumping equip. and one 10,000 gal., underground gasoline storage tank with service station type pump; hot mix paving, conc. paving, utilities, incl. water, sewer, gas, electric, Biggs Air Force Base, ENG-29-005-56-43.

† **Tex., Rockport**—AC&W STATION—BA 1/27—U. S. Eng., P.O. Box 1229, Galveston, 13 unit masonry bldgs. with approx. 60,000 sq. ft. total floor area, incl. approx. 18,000 sq. yds. flexible type pavement; approx. 3,150 lin. ft. 4 ft. barbed wire fencing, approx. 3,650 lin. ft. 6 ft. chain link fencing, ENG-41-243-56-39. Est. $500,000-$1,000,000. CD 5/3.

† **Tex., Eagle Pass Air Force Station**—AC&W STATION—BA 1/30—U. S. Eng., P.O. Box 1229, Galveston, AC&W Station, incl. three 2-story unit masonry bldgs., nine 1 story unit masonry bldgs.; rehabilitation of approx. 9,000 lin. ft. existing 20 ft. streets, 2,650 lin. ft. 4 ft. four strand barbed wire fencing, 2,740 lin. ft. 6 ft. chain link fencing, ENG-41-243-56-37.

† **Tex., Ellington Air Force Base**—ELECTRICAL DISTR.—BA 1/30—U. S. Eng., P.O. Box 1229, Galveston, 5,000 lin. ft. new 6,960/12,000 volt electrical distr. line, remove approx. 125 existing 2,400 volt transformers and replacement of same with 6,960 volt transformers, etc., ENG-41-243-56-29. CD 2/15.

† **N. M., Alamogordo**—WATER TRANSMISSION LINE—BA 1/31—U. S. Eng., P.O. Box 1538, Albuquerque, Bonito water transmission line, water potable mains, Holloman Air Force Base, ENG-29-005-56-15. CD 10/20.

† **South Dakota**—BA 1/31—U. S. Eng., 1709 Jackson St., Omaha, Neb., intake structure portable service elevator, Fort Randall Reservoir Proj., Pickstown, Inv. 25-066-56-85. CD 5/25/44.

† **South Dakota**—SUBSTATIONS—BA 1/31—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Schedule 1, Item 1, one control board CHB for Granite Falls substation, Item 2, one control board, CHD for Granite Falls substation, Item 3, one control board, CHA, Granite Falls substation, Schedule 2, Item 4, one controlling station supervisory control and telemetering switchboard for Watertown substation for the remote supervisory control of Granite Falls substation, Item 5, one controlled supervisory control and telemetering switchboard for Granite Falls substation, Transmission Div., Missouri River Basin Proj. DS 4592.

† **Tex., Lackland Air Force Base**—DRAINAGE DEFICIENCIES—BA 1/31—U. S. Eng., P.O. Box 1229, Galveston, correction of drainage deficiencies, ENG-41-243-56-36. CD 8/23.

† **Tex., Zapata**—AC&W STATION—BA 1/31—U. S. Eng., P.O. Box 1229, Galveston, 14 unit masonry bldgs. approx. 60,000 sq. ft. total floor area, incl. 2 mi. water line from City of Zapata to site; approx. 28,000 sq. yds. flexible paving; approx. 3,300 lin. ft. 4 ft. barbed wire fencing; approx. 3,096 lin. ft. 6 ft. chain link fencing, ENG-41-243-56-38. Est. $500,000-$1,000,000.

† **N. M., Roswell**—WAREHOUSE—BA 2/1—U. S. Eng., P.O. Box 1538, Albuquerque, warehouse, base, bulk, supply, Walker Air Force Base, ENG-29-005-56-28. CD 10/20.

BUILDINGS—BA

Mo., Hazelwood (St. Louis 21 P.O.)—SCHOOL—BA 1/20—School Dist. of Hazelwood R-1, St. Louis Co., Bd. Educ., Clifford Kirby, supt. schools, Hy. No. 66, 1 story, bsmnt., brick, block, masonry elementary school on Mullanphy Lane west of Howdershell Rd., Plans deposit $25, Kenneth E. Wischmeyer, 911 Locust St., St. Louis, Zone 1, archt. CD 2/2/55.

BUILDINGS—SLC

Neb., Lincoln—PARKING GARAGE—State Securities Co., 132 S. 13 St., soon lets contract, 5 story off street parking garage $400,000. Clark & Enersen, 1415 Sharp Bldg., archts. CD 12/13.

HEAVY CONSTRUCTION—LB & CA

† **W. A. Klinger Constr. Co.**, 2015 7 St., Sioux City, Iowa. LB **$276,910.** dining hall, Sioux City Air Force Base, Inv. 25-066-56-47, SIOUX CITY, IOWA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Dec. 22. CD 12/2.

▲† **J. W. Bateson**, Gibralter Life Bldg., Dallas, Tex. CA **$5,461,750,** family housing, Lincoln Air Force Base. Inv. 25-066-56-6. LINCOLN, NEB. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Dec. 22. CD 12/28, under LB.

† **Horn & Smith Constr. Co.**, 729 N. 32 St., Lawton, Okla., LB **$274,814.** est. $245,000, street imprvs., flexible base course, Altus Air Force Base. Eng. 34-066-56-32. ALTUS, OKLA. U. S. Eng., Box 61, Tulsa 2, Okla. Bids Dec. 21. CD 11/16.

† **J. S. Gissel & Co.**, 2801 Erath St., Houston, Tex. LB **$222,872.** est. $100,000. dredging Gulf Intracoastal Waterway from Port Isabel to Mud Flats. Cameron, Willacy and Kennedy Counties. CIVENG-41-243-56-25. TEXAS. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. Bids Dec. 20. CD 12/8.

† **Tower Contrg. Co. of Texas, Inc.**, Box 5006, Corpus Christi, Tex., LB **$392,999.** water distr. sys. imprvs., Naval Auxiliary Air Station, Chase Field, NOY 86373. BEEVILLE, TEX. Bureau Yards & Docks, Dpt. Navy, Naval Air Station, Corpus Christi, Tex. Bids Dec. 21. CD 11/17.

† **U. S. Eng.**, Box 1538, Albuquerque, N. M., concelled bids to have been opened Jan. 24, dining hall and dormitory, Reese Air Force Base. ENG-29-005-56-55. est. **$750,000.** LUBBOCK, TEX. CD 12/23.

† **T. B. Hubbard Const. Co.**, Box 1652, Houston, Tex. LB **$323,280,** Schedule 1; LB **$279,499,** (Additive Alt.) airmens dormitories, Foster Air Force Base. Inv. No. ENG-41-243-56-27. VICTORIA, TEX. U. S. Eng., Box 1229. Galveston, Tex. Bids Dec. 22. CD 11/29.

BUILDINGS—LB & CA

† **Dondlinger & Sons,** 1206 E. Lincoln St., Wichita, Kan. LB **$965,001.** Est. $995,554. (9 bidders) family housing 70 units, Eng. 56-42, FORT CROWDER, MO. U. S. Eng., 911 Walnut St., Kansas City 6, Mo. Bids Dec. 20. CD 12/1.

Young Bros., 3519½ Troost St., Kansas City, Mo. CA **$200,000.** WAREHOUSE addn., NORTH KANSAS CITY, MO. Standard Steel Works, 16 and Howell Sts., North Kansas City, Mo.

Wray M. Scott Co., 2811 Dodge St., Omaha, Neb., CA **$207,850,** power piping at new constr. of POWER PLANT, GRAND ISLAND, NEB. City, City Hall, Grand Island, Neb., Lutz & May, Finance Bldg., Kansas City, Mo.; engrs. CD 9/24/53.

W. C. Shelton, 1309 Gore Blvd., Lawton, Okla., CA **$347,500** est. $350,000. PHYSICAL EDUCATION BLDG., LAWTON, OKLA. Cameron College, Lawton, Okla. Bids Dec. 15. Awarded Dec. 21. CD 12/8.

Charles Moreau & Co., 4521 N. Santa Fe St., Oklahoma City, Okla., CA est. **$600,000.** 4 story OFFICE and shops, 9th and Robinson Sts., OKLAHOMA CITY, OKLA. Fred Newman, Leonhardt Bldg., Oklahoma City, Okla. John Reid & Co., 1528 N. W. 36 St., Oklahoma City Okla. archts. Awarded Dec. 20.

Schio Petroleum Co., Skirvin Tower Bldg., Oklahoma City, Okla., rejected bids, OFFICE, N. W. 50 and May Sts., LB **$806,000.** OKLAHOMA CITY, OKLA. CD 11/29, under LB.

P. G. Troop, 2401 N. Main St., McAlester, Okla. CA **$772,102.** est. $750,000. LIBRARY, classrooms, student union, Eastern Oklahoma A & M College, WILBURTON, OKLA. Bd. Regents, Capitol, Oklahoma City, Okla. Bids Dec. 13. Awarded Dec. 21. CD 12/7.

W. J. Aldrich, 716 E. Commerce St., San Antonio, Tex. LB **$313,900,** WAREHOUSE and office at Hondo, Medina Co. TEXAS. Medina Electric Co-operative, Inc., Hondo, Tex. Bids Dec. 22. CD 12/14.

Ike Harris Constr. Co., 10314 Lanshire St., Dallas, Tex. Owner Builds. **$376,615,** 33 DWELLINGS; **$372,500,** 35 dwellings, DALLAS, TEX. CD 9/15.

Geo. F. Mixon and Wm. R. Troth, 9007 Devonshire Dr., Houston, Tex. Purchase and Hire. **$352,500,** 7 masonry DWELLINGS; **$379,750,** 14 dwellings, DALLAS, TEX. CD 11/25.

Everett Brown, Plainview, Tex. Own Forces. **$350,000,** 28 DWELLINGS; **$365,000,** 32 DWELLINGS, DIMMITT, TEX. CD 11/18.

Sam Guido Jr. & Assocs., Caples Bldg., El Paso, Tex Own Forces. **$355,110,** 22 DWELLINGS; **$376,165,** 30 DWELLINGS, EL PASO, TEX. CD 10/28.

▲ **The Cato Corp.**, c/o C. Grady Cates, Jr., 9747 Harry Hines Blvd., Dallas, Tex. Own Forces: **$361,900,** Job 13, 33 DWELLINGS; **$394,150,** Job 14, 41 DWELLINGS; **$381,425,** Job 15, 38 DWELLINGS. Grand total $1,137,475. FARMERS BRANCH, TEX. CD 8/18.

Cloer Constr. Co., Box 12368, Fort Worth, Tex., CA **$347,500,** 29 addnl. DWELLINGS, FORT WORTH, TEX. E. E. Cloer, Box 12368, Fort Worth, Tex. CD 11/30.

Whitehill Constr. Co., 6378 Greenway Rd., Fort Worth, Tex. Own Forces. **$350,000,** 42 DWELLINGS, FORT WORTH, TEX. CD 11/22.

W. W. Price Const. Co., Box 846, Olney, Tex. CA **$584,900,** HOSPITAL, GRAHAM, TEX. City, Graham, Tex. Bids Dec. 20. CD 12/29, under LB.

John B. Brown Co., 7026 Lawndale St., Houston, Tex. CA **$356,000,** 25 DWELLINGS; CA **$349,185,** 21 DWELLINGS, HOUSTON, TEX. Canterbury Village, Valentine Land Co., c/o John Wheat, Bank of Commerce Bldg., Houston, Tex. CD 7/27.

Krist Hubert and **Geo. Heiken, Builders,** 3300 Aspen St., Houston, Tex., CA **$358,118,** 31 DWELLINGS; CA **$372,225,** 36 DWELLINGS, HOUSTON, TEX. Krist Hubert & Assocs., 3300 Aspen St., Houston, Tex. CD 11/30.

▲ **The Martin Building Co.**, 9501 Chocolate Bayou, Houston, Tex. Own Forces. **$349,522,** 30 DWELLINGS; **$358,925,** 33 DWELLINGS; **$375,160,** 38 DWELLINGS. Grand total $1,083,607, HOUSTON, TEX. CD 11/23.

Greater Buffalo Press, Inc., 302 Grote St., Buffalo, N. Y. Own Forces. Approx. **$285,000.** printing PLANT, LUFKIN, TEX. CD 11/25.

Temple Assocs., Diboll, Tex., CA **$200,000.** assembly and fabrication PLANT, LUFKIN, TEX. T. L. Smith Co., 2835 N. 32 St., Milwaukee, Wis. CD 11/2, under CA.

Berkshire Village Corp., c/o T. E. Braswell, 205 Malvern St., Houston, Tex. Force Account, **$375,000.** SHOPPING CENTER, PASADENA, TEX. CD 9/30.

F. L. Scott & Son, 2402 W. Kings Hy., San Antonio, Tex. CA **$869,393.** HIGH SCHOOL, SAN ANTONIO, TEX. South San Antonio Independent School Dist., 464 Dwight Ave., San Antonio, Tex. Bids Dec. 21. CD 12/29, under LB.

Robert H. Lupton, Builder, 4207 Byron St., Houston, Tex. CA **$428,810,** 44 frame DWELLINGS; CA **$477,000,** 50 frame DWELLINGS, SPRING BRANCH, TEX. Robert H. Lupton, 4207 Byron St., Houston, Tex. CD 5/6.

▲ **Lembke, Clough & King,** Box 455, Albuquerque, N. M. CA **$1,964,591.** GYMNASIUM, ALBUQUERQUE, N. M. University of New Mexico, Bd. Regents, Albuquerque, N. M. CD 11/30, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

† **Oregon**—BA 1/25—U. S. Eng., 628 Pittock Block, Portland, Zone 5, const. slope protection facilities on the Union Pacific RR embankment approx. 2 mi. east of Rufus, Ore. and 2 mi. east of John Day River. CIVENG 35-026-56-115.

† **Idaho**—AMMO STORAGE BLDG.—BA 1/26—U. S. Eng., City-County Airport, Walla Walla, Wash., 17x21 ft., masonry ammo storage bldg., 10x53 ft. masonry segregated storage mag., 27x81 ft. rein.-con. explosive and ATO storage igloo, etc., Mountain Home Air Force Base, ENG-45-164-56-23. CD 11/5/51.

HEAVY CONSTRUCTION—LB & CA

Goodwin Constr. Co., Blackfoot, Idaho. LB **$174,775.** (6 bidders) disposal plant, ARCO, IDAHO. City, City Hall, Arco, Idaho. Bids Dec. 12. CD 11/14.

NEVADA—Dirs. Dpt. Hys., State Office Bldg., Carson City,
Dodge Constr., Inc., 346 N. Maine St., Fallon, Nev., CA **$218,975.** const. portion State Hy. Sys. between 9 mi. south of Gerlach and Gerlach, FAS Rte. 710, Control Sect. WA-38, Proj. No. S-SG-710 (4), State. Hy. Contr. No. 943, Washoe Co. Bids Dec. 22. CD 12/8.

▲† **Herbert E. Ellis**, Box 146, Station A, Berkeley, Calif., LB **$1,046,332** (8 bidders) San Francisco Defense Area, clearing, site grading, roads, parking, barracks, mess hall, underground storage. Spec. ENG 56-26. Contra Costa Co. CALIFORNIA. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Bids Dec. 13.

† **R & P Contractors, Inc.**, Rte 1, Shelton, Wash., LB **$383,460.** est. $455,300 (8 bidders) clearing, grubbing, burning Feather River Sutter Bypass upstream to Yuba River, Yuba and Sutter Counties. CIVENG 04-167-56-1. CALIFORNIA, U. S. Eng., 1209 8th St., Sacramento, Calif. Bids Dec. 21. CD 11/30.

Robert J. Skinner, 8639 Calmosa Ave., Whittier, Calif. LB **$476,328.** est. $500,000. Proj. 27, Baldwin Ave.

(Continued on page 68)

Public Housing Project Mo. 1-6, Phase 1, providing 660 dwelling units for low-income families.

Architects: Hellmuth, Obata & Kassabaum, Inc.; **General Contractor:** Millstone Construction Co.; **Engineer:** William C. E. Becker. All of St. Louis.

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(Continued from page 66)

storm drain, Rosemead, LOS ANGELES, CALIF. Los Angeles Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids Dec. 16. CD 11/30.

▲† **Peter Kiewit Sons Co. and Fredericksen & Kassler,** 345 Kieways Ave., Arcadia, LB **$1,135,288.** roads and railroads for test stands, Edwards Air Force Base. ENG-04-353-56-66. MUROC, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Dec. 28. CD 12/16.

M. H. Golden Const. Co., 3485 Noell St., San Diego, Calif., CA **$253,691,** Switzer Creek storm drain outfall, SAN DIEGO, CALIF. City, San Diego, Calif., Alden K. Fogg, city engr. Bids Nov. 23, awarded Dec. 15. CD 11/7/52.

† **U. S. Eng.,** 751 S. Figueroa St., Los Angeles, Calif., concelled bids to have been opened Dec. 29, alert taxiway, George Air Force Base. ENG-04-353-56-34. VICTORVILLE, CALIF. CD 12/12.

BUILDINGS—LB & CA

† **Rutherford Constr. Co.,** 915 Hazeldine Ave. S. E., Albuquerque, N. M. CA **$766,735.** SCHOOL facilities, KEAMS CANYON, ARIZ. Bureau of Indian Affairs, Box 931, Albuquerque, N. M. CD 11/16, under LB.

Youel & Huffman, 170 W. Hilliard Lane, Eugene, Ore. LB **$473,419.** CHURCH, EUGENE, ORE. First Presbyterian Church, Eugene, Ore., Freeman, Hayslip, Tuft & Hewlett, 2040 S. W. 3 St., Portland, Ore. archts.

Smith & Nelson, Oregon Bldg., Salem, Ore., LB **$436,000** (3 bidders) Y.M.C.A. BUILDING, SALEM, ORE. Young Mens Christian Assn., Salem, Ore. James L. Payne, Salem, Ore., archt. CD 3/18/46.

C. C. Sharp, 306 Branch St., Arroyo Grande, Calif., LB **$363,200.** est. $360,000 (2 bidders) HIGH SCHOOL addns., ARROYO GRANDE, CALIF. Arroyo Grande Union High School Dist., Arroyo Grande, Calif. Bids Dec. 20. CD 12/8.

Wm. C. Crowell Co., 170 E. California St., Pasadena, Calif., LB **$518,200.** est. $500,000 (9 bidders) Murphy Rranch SCHOOL, EAST WHITTIER, CALIF. East Whittier School Dist., 14535 E. Whittier Blvd., East Whittier, Calif. Flewelling & Moody, 766 Colorado Blvd., Los Angeles, Calif., archts. Bids Dec. 20.

R. J. Daum Constr. Co., 12537 S. Cerise Ave., Hawthorne, Calif., CA **$919,525,** 31,000 sq. ft. TELEPHONE BLDG. addn., LOS ANGELES, CALIF. Pacific Telephone & Telegraph Co., 740 S. Olive St., Los Angeles, Calif. Bids Dec. 2.

Carter Mack Builders, 1424 W. 251 St., Harbor City, Calif., CA **$564,740.** est. $750,000 (4 bidders) Beryl Heights and Madison SCHOOLS, REDONDO BEACH, CALIF. Redondo Beach City School Dist., 115 S. Francisca Ave., Redondo Beach, Calif. Bids Dec. 21. CD 12/8.

Marvin E. Collins, 635 San Diego St., El Cerrito, Calif., LB **$480,926** (5 bidders), Madera SCHOOL, El Cerrito, RICHMOND, CALIF. Richmond City Elementary & Union High School Dist., c/o supt., 1108 Bissell Ave., Richmond, Calif., John C. Warnecke, 507 Howard St., San Francisco, Calif., archt. CD 12/14.

J. C. Boespflug, 605 S. Lucas St., Los Angeles, Calif., CA **$846,000.** est. $1,031,000. 51,532 sq. ft. Riverside County HOSPITAL addn., RIVERSIDE, CALIF. Riverside Co., Court House, Riverside, CALIF. Bids Nov. 9. Awarded Dec. 20. CD 11/22, under LB.

I. C. Curry, 1701 "B" St., San Diego, Calif., LB **$397,870.** est. $500,000 (10 bidders) Stephen Foster elementary SCHOOL, SAN DIEGO, CALIF. San Diego Unified School Dist., 4100 Normal St., San Diego, Calif. Clyde Hufbauer, 1975 5 Ave., San Diego, Calif., archt. Bids Dec. 20.

M. J. Brock & Sons, Inc., 2894 Rowena Ave., Los Angeles 39, Calif., LB **$698,630,** (5 bidders) general constr., three WARD BLDGS., Pacific State Hospital, SPADRA, CALIF. State Div. Architecture, 1100 S. Grand Ave., Los Angeles, Calif. Bids Dec. 21. CD 11/23.

CANADA

HEAVY CONSTRUCTION—LB & CA

ONTARIO—Dpt. Hys., Parliament Bldgs., Toronto, **Towland Constr. Co. Ltd.,** Box 815, London, Ont., LB **$623,298** (13 bidders) granular base, hot mix paving 6.6 mi. Hy. 401, from 0.65 mi. east of Sweaborg Rd. to 0.9 mi. east of Hy. 19, incl. one cloverleaf, Contr. 55-229, Sweaborg. Bids Dec. 21. CD 12/5.

▲ **McNamara Constr. Co. Ltd.,** 42 Industrial St., Toronto, Ont., **Pigott Constr. Co.,** 1250 Bay St., Toronto, Ont., and **Peacock & McQuigge, Ltd.,** 1109 Millwood Rd., Toronto, Ont., CA **$7,899,472.** constr. St. Lambert Lock and approaches in the Lachine Sect. of St. Lawrence Seaway. QUEBEC. St. Lawrence Seaway Auth., No. 2 Temporary Bldg., Ottawa, Ont. Bids Dec. 20. CD 11/29.

J. A. Auclair, 105 Royale St., Gifford, Que., CA est. **$400,000.** WW. wells, etc., 4 mi. water mains, PETITE RIVIERE, QUE. Village, P. H. Gauvin, secy., Petite Riviere, Que., M. Gilbert, 31 MacMahon St., Quebec City, Que. engr. CD 5/22/52.

J. A. Auclair, 105 Royale Rd., Giffard, Que., CA **$350,000.** exten. approx. 1 mi. to water mains. STE. FOY, QUE. City, City Hall, Ste. Foy, Que. Marc Gilbert, 31 MacMahon St., Quebec City, Que., engr. Awarded Dec. 13. CD 3/13/52.

BUILDINGS—LB & CA

Finley W. McLachlan Co. Ltd., 195 Fairbanks Ave., Toronto, Ont. Owner Builds. **$328,000.** 1 story masonry PLANT, OFFICE, Warden Ave., TORONTO, ONT.

ALASKA

BUILDINGS—BA

† **Alaska, College**—POWER PLANT—BA 1/25—Alaska P. Wks., Dpt. Interior, Box 1181, Juneau, power plant addns., alterations at University of Alaska. Proj. 50-A-147. Unit 2. Plans deposit $25.

HEAVY CONSTRUCTION—LB & CA

▲† **Birch-Green,** Securities Bldg., Seattle 1, Wash., **Morrison-Knudsen Co. Inc.,** 319 Broadway, Boise, Idaho and **McLaughlin, Inc.,** P. O. Box 1824, Great Falls, Mont., LB **$8,915,267.** (2 bidders). runway and taxiway extens. Elmendorf Air Force Base. Inv. 56-1. ALASKA. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids Dec. 28. CD 12/2.

▲† **Peter Kiewit Sons' Co.,** 1300 Aloha St., Seattle, Wash., LB **$8,170,058.** est. $7,282,916, 10-schedule bid; LB **$405,165,** est. $384,256, Schedule B, communications and electronics bldg. with utilities; LB **$971,304.** est. $889,155, Schedule C, airmen's dining hall with utilities; LB **$703,543.** est. $633,128, Schedule D, officers quarters, nurses' bldg. with utilities; LB **$386,144.** est. $341,671, Schedule F, officers' dining hall with utilities; LB **$454,114.** est. $414,381, Schedule G, chapel with utilities; LB **$68,569.** est. $77,823, Schedule K, deep well pump house at Elmendorf Air Force Base. Inv. 56-3. ALASKA. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids Dec. 20. CD 12/27, under LB.

Baker & Ford, Mason Bldg., Bellingham, Wash., LB **$2,873,899.** est. $3,034,532, Schedule A, nose wing hangars, Inv. 56-3 (Alaska).

Birch-Green, Central Bldg., Seattle, Wash., LB **$227,000,** est. $196,131, Schedule E, potable water supply mains, Inv. 56-3 (Alaska).

Clements Constr. Co., Anchorage, Alaska, LB **$493,709,** est. $484,742, Schedule H, dental clinic with utilities, Inv. 56-3 (Alaska).

Morrison-Knudsen, 319 Broadway Ave., Boise, Idaho, LB **$785,516,** est. $817,097, Schedule J, utilities to serve Area "A" hardstands, Inv. 56-3 (Alaska).

▲† **Morrison-Knudsen Co. Inc.,** 319 Broadway, Boise, Idaho, CA **$1,515,186,** 42,300 sq. yds. tar rubber surf. and 28,000 sq. yds. b. conc. paving of taxiway and apron parking, 8,110 sq. ft. concrete addn. to ready rocket bldg., etc., King Salmon Airport. Inv. 56-7. NAKNEK, ALASKA. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids Dec. 16. CD 12/21, under LB.

FOREIGN

HEAVY CONSTRUCTION—BA

Arabia, Saudi—RAILROAD—BA 2/12—Ministry of Finance & National Economy, Jeddah, Saudi Arabia, const. Riyadh-Medina-Jeddah RR with its four branch lines. Plans deposit $168. Extended date. Plans available Saudi Arabian Embassy, 2800 C Woodland Dr., N.W. Wash., D. C. CD 10/21.

PROPOSED PROJECTS

WATER SUPPLY

▲ **O., Toledo**—City, John Alspach, Serv. Dir., City Hall, expand filter plant to 40 m.g.d. capacity. est. **$3,600,000.** John Davis, city engr. CD 10/8/51.

▲ **Tex., Fort Worth**—City, City Hall, bond election January 31, water imprvs. **$17,000,000.** CD 2/4/49.

SEWERS, WASTE DISPOSAL

▲ **Tex., Fort Worth**—City, City Hall, bond election January 31, sewers, **$1,000,000.** CD 2/1/54.

Alta., Lethbridge—City, City Hall, sanitary sewer and storm sewer. **$920,000.** To begin in 1956. CD 9/9/53.

STREETS AND ROADS

▲ **Tex., Lubbock**—Lubbock Co., Court House, voted bonds Dec. 17, county-wide road imprvs., farm to market four-laning and widening of state and national hys. farm highways and other roads in county. **$1,897,000.** CD 11/30.

AIRPORTS

▲† **Ark., Jacksonville**—HOUSES—U. S. Eng., P.O. Box 867, Little Rock, plans by Wittenberg, Delony & Davidson, Pyramid Bldg., Little Rock, 1,535 houses, Little Rock Air Force Base. **$20,000,000.** Kenneth W. Lefever, 401 Victory Blvd., Little Rock, consult. engr.

PUBLIC BUILDINGS

▲ **Calif., Fairfield**—SCHOOL—Armijo Union High School Dist., c/o supt., Box 483, Fairfield, bond election February 28, school, **$650,000-$1,900,000.**

▲ **Calif., Woodland and West Sacramento**—SCHOOL—Woodland Union High School Dist., c/o supt., Woodland, bond election February 16, completion of Woodland High School and either rehabilitate existing James Marshall High School or constr. new high school. **$3,250,000.** Baravetto & Thomas, 718 Alhambra Blvd., Sacramento, archts. CD 12/2/54.

Iowa, **Algona**—SCHOOL—Community School Dist., Bd. Educ., voted **$544,000** bonds Dec. 5, East Side School, addns. to Byrant and Lucia Wallace Schools. CD 7/26.

Iowa, **Ely**—HIGH SCHOOL—College Community School Dist., Linn Co., Ely, plans by L. A. Daly Co., Insurance Bldg., Omaha, Prairie High School. **$500,000.** Bids in January. CD 3/16.

Kan., **Turner**—SCHOOL—Directors of School Bd., voted **$501,000** bonds Dec. 8, school addn.

Kan., **Valley Center**—SCHOOL—School Dist. 46, Sedgwick Co., voted **$625,000** bonds Dec. 10, high school, Hibbs, Robinson & Pettit, 519 S. Broadway, Wichita, archts.

Minn., **Slayton**—SCHOOL—Bd. Educ., S. H. Stephenson, clk., voted $600,000 bonds Dec. 6, grade school and high school addns., **$550,000,** Pass, Rockey, Church & Townes, Mankato, archts. CD 12/8.

▲ Mo., **Kirkwood** (St. Louis 22 P.O.)—SCHOOLS—Kirkwood School Dist. R-7, Bd. Educ., Alva L. Crew, supt. schools, 516 S. Kirkwood, Zone 22, **$2,800,000** bond election Feb. 14, schools and school addns. CD 12/16/53.

▲ Neb., **Omaha** — ARTS-ENGINEERING BLDG. — University of Omaha, Omaha, applied arts and engineering bldg. **$800,000-$1,000,000.** CD 7/30/43.

▲ Okla., **Tulsa**—HIGH SCHOOL—Bd. Educ., 410 S. Cincinnati St., plans by Black & West, tri State Insurance Bldg., junior high school **$1,280,000.** CD 5/24/54.

Tex., **Irving**—HIGH SCHOOL—Irving Independent School Dist., Irving, plans by Wyatt C. Hedrick, 904 S. Fort Worth Ave., Dallas, junior high school. **$500,000.** CD 9/30.

Wash., **Lacey**—SCHOOL—School Dist. No. 3, Lacey, bond election March 13, elementary school in Mountain View area east of Olympia. **$500,000.** W. A. Johnson & Assocs., N. Broadway, Everett, archts. CD 10/17.

Que., **Shawinigan Falls**—SCHOOL—La Commission Scolaire de Shawinigan Falls, Shawinigan Falls, school, LaSalle and St. Jacques Sts. **$700,000.**

COMMERCIAL BUILDINGS

Iowa, **Dubuque**—SCHOOL—Dubuque Archdiocesan Chancery, 1100 Bluff St., plans by Durrant & Beraquist, 666 Loras St., Central Catholic High School, **$800,000.** CD 11/3.

Mass., **Saugus**—HOSPITAL—Saugus General Hospital, Vincent G. Pendleton, pres., 81 Chestnut St., hospital wing addn., **$500,000.**

▲ N. Y., **Hamburg**—SHOPPING PLAZAS—Loblaw's Inc., 678 Bailey Ave., Buffalo, shopping plaza northwest corner of Southwestern Blvd. and Rogers Rd. Constr. in the Summer of 1956; shopping plaza incl. 26 stores, Lake Ave. and Abbott Rd., **$3,000,000.**

▲ O., **Dayton**—HOMES—Paul E. Lapp, 727 Cottonwood St., 120 homes, 52-acre site, south side of Whipp Rd., west of Lebanon Pike. **$4,000,000.**

Tex., **Dallas**—COMMERCIAL BLDG.—Simons Building, c/o A. Pollard Simons, 2538 Cedar Springs St., plans by Thomas, Jameson & Merrill, 820 N. Harwood St., remodel existing (Simons Bldg.) commercial bldg. **$500,000.**

▲ Tex., **Houston**—OFFICE—Edw. J. Klein & Assocs., 5376 Cedar Creek, office, **$500,000;** commercial, **$500,000,** on Cullen Blvd. at Old Spanish Trail.

Wisconsin—RURAL DISTRIBUTION LINES—Trempealeau Electric Co-operative, Arcadia, 60 mi. rural distr. lines, sys. imprvs., Trempealeau Co., **$500,000.** CD 7/12/51.

▲ Wis., **Manitowoc** — COLLEGE BLDGS. — Franciscan Sisters of Christian Charity, R1., Manitowoc, plans by E. Brickmaier & Sons Co., 735 N. Water St., Milwaukee, Zone 2, 4 connected bldgs. on Holy Family College, **$2,000,000.** To go ahead after Jan. 1.

▲ Wis., **Watertown**—HOSPITAL—St. Mary's Hospital, Watertown, hospital, **$3,000,000.**

▲ Man., **Winnipeg**—HOSPITAL—Victoria Hospital Bd. Trustees, River and Rose Sts., plans by Kurnasky & Weinberg, 406 Montreal Trust Bldg., 150-175 bed hospital imprvs. est. **$1,500,000.** CD 12/20/54.

▲ N. B., **St. John**—SHOPPING CENTER—Principal Investments, Ltd., 132 Richmond St. W., Toronto, Ont., shopping center, Lansdowne Ave. **$2,000,000.**

Ont., **Toronto**—APARTMENT—Allen Plaza Apartments, Ltd., 514 Jarvis St., plans by F. W. Beddell, 215 Erskine Ave., 11 story masonry, steel, rein.-con. slab apartment, all parking below grade. **$720,000.** CD 7/8, under H. Lederman & J. Verina.

Que., **Berthierville**—HOTEL—Chateau Berthelet Hotel, Berthierville, hotel reconstr. **$500,000.**

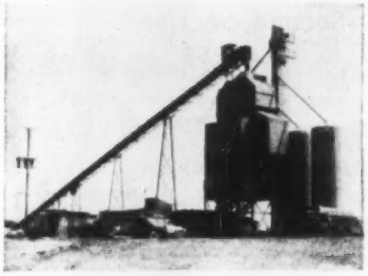
INDUSTRIAL BUILDINGS

▲ Wis., **Green Bay**—GENERATING PLANT—Wisconsin Public Service Corp., 600 N. Adams St., electric generating plant, **$15,000,000.** Pioneer Service & Engr. Co., 231 N. LaSalle St., Chicago, Ill., consult. engrs., R. C. Staub, owner's engr. CD 9/19/51.

▲ Alta., **Edmonton**—PLANT—Ford Motor Co. of Canada, 120 Bloor St. E., Toronto, plans by K. Stanley & Assocs., 618 Northern Hardware Bldg., parts and accessories plant, 111th Ave. **$1,000,000.** CD 9/7.

UNCLASSIFIED

Washington—SUBSTATION—Snohomish County Public Utility District, Everett, Lynnwood substation, **$130,000;** Monroe-Sultan 12 Kv line, **$80,000;** Everett substation, **$647,000.** To go ahead in 1956. CD 12/21/53.



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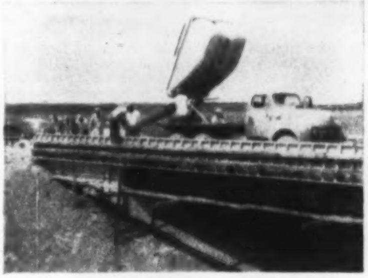

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NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
January 17, 24, 31, February 7, 14 Massachusetts

HEAVY CONSTRUCTION—LB & CA

▲ **NEW HAMPSHIRE**—State Dpt. P. Wks. & Hys., Concord,
R. G. Watkins & Son, Inc., Mill Yard, Amesbury, Mass., LB **$1,941,249** (4 bidders) road mix 4-lane divided hy., 1.1 mi. and 4 steel beam bridges, Spaulding Turnpike, Dover. Bids Dec. 29. CD 12/20.

▲ **CONNECTICUT**—State Hy. Comn., State Office Bldg., Hartford,
Peter W. Kero, 216 Washington Ave., Carlstadt, N. J. LB **$5,808,640.** 15,778 ft. c. conc. and 9 bridges in Stamford and Darien, Fairfield Co. **(Correction**—low bidder). CD 12/13, under LB.

▲ **CONNECTICUT**—State Hy. Comn., State Office Bldg., Hartford,
John R. Arborio Inc., W. Cedar St., Poughkeepsie, N. Y., LB **$4,072,983.** Project 315-02, Connecticut Turnpike, c. conc. incl. grade separation structures, 15,600 lin. ft. Morgan Lane, Alling Crossing Rd., Saw Mill Rd., Greta St. and Shumway Rd., Orange and West Haven. Bids Jan. 4. CD 12/14.

BUILDINGS—LB & CA

▲ **Aberthaw Constr Co.**, 60 State St., Boston, Mass. CA Approx. **$1,990,000.** MFG. PLANT, South Bedford St., BURLINGTON, MASS. High Voltage Engineering Corp., 7 University Rd., Cambridge, Mass. Maurice A. Reidy, 101 Tremont St., Boston, Mass., struct. engr. Slocum & Fuller, 40 Central St., Boston, Mass., mech. engrs. Henry L. Kennedy, 62 Whittemore Ave., Cambridge, Mass., consultant. CD 12/30, under LB.

▲ **State, University of Mass.**, Kenneth W. Johnson, pres., c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass., rejected bids Dec. 15. U-603-1 women's physical education bldg., University of Mass., AMHERST, MASS. LB **$1,900,000.** CD 12/20, under LB.

▲ **E & F Constr. Co.**, 94 Wells St., Bridgeport, Conn., CA, **$2,660,000.** Parochial HIGH SCHOOL, Park Ave., FAIRFIELD, CONN. Diocese of Bridgeport, c/o Chancery Office, 359 Washington Ave., Bridgeport, Conn. Bids Dec. 20. CD 12/27, under LB.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
January 27 Pennsylvania
STREETS AND ROADS
January 17, 24 New Jersey January 27 Pennsylvania

BUILDINGS—BA

▲ **Md., Baltimore**—HOSPITAL—BA 1/27—Associated Jewish Charities, Eutaw and Monument Sts., Zone 1, (selected list bidders), six 2 to 5 story hospital bldgs., power plant, Greenspring and Belvedere Aves. Total est. $12,000,000, Voorhees, Walker, Smith & Smith, 101 Park Ave., New York 17, N. Y., archts. Jas. H. Stevenson, 401 N. Charles St., Baltimore, Zone 1, local archt. CD 1/28/54.

HEAVY CONSTRUCTION—LB & CA

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,
Pa.—**Lycoming Constr. Co., Inc.**, 127 Susquehanna St., Williamsport, Pa. LB **$4,395,258.** constr., 44,001 ft. divided hy. of crushed aggregate base, with bit. surf. 24 ft. wide, each side of 4 ft. concrete divisor, 1 deck truss, three I-beam bridges, 2 rein.-con. arch bridges, Rostraver and S. Huntingdon Twps., T. R. 31, Westmoreland Co.;
Pa.—**John H. Swanger, Inc.**, P. O. Box 1214, Lancaster, Pa. LB **$1,293,018.** constr. 17,850 ft. divided hy. of rein.-con. 24 ft. wide, each side of concrete or each divisor, I-beam bridge TR 83-122-222, sect. of Warren St. by-pass, city of Reading, Muhlenberg Twp., Berks Co.;
Pa.—**New Enterprise Stone & Lime Co.**, New Enterprise, Pa. LB **$399,412.** wid'n. 22,183 ft. existing road with crushed aggregate base surf. new and existing pavement with bit. surf., West St. Clair Twp., T. R. 56, Bedford Co.;
Pa.—**Smith Constr. Co. of Ohio**, P. O. Box 515, Vienna, O. LB **$499,311.** wid'n., overlay 23,432 ft. existing pavement, bridge floors with crushed aggregate base, bit. surf. Tionesta and Hickory Twps., T. R. U. S. 62, Forest Co. Bids Dec. 29. CD 12/8.

▲ **Laub Constr. Co., Inc.**, 1518 Walnut St., Phila., Pa. LB **$2,444,987.** general constr., Bid 2500, Queen Lane Filter plant, Rapid Sand filters, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa.;
Roberts Filter Mfg. Co., Darby, Pa., LB **$1,947,220.** piping, Bid 2501 (Phila., Pa.).

▲ **Wright Constr. Co.**, Brookhaven Rd., Columbus, Ga. CA **$2,771,077.** Contr. 103, section of south approach expressway 0.96 mi. also 2,400 ft., 42 simple span viaduct over Patapsco River, 3 span bridge, Patapsco Tunnel Praj., MARYLAND. State Rds. Comn., 108 E. Lexington St., Baltimore 2, Md. CD 12/12, under LB;
Buckley & Co., Inc., 1317 S. Juniper St., Phila., Pa. CA **$3,750,960.** Contr. 105, south approach expressway, 1.48 mi. incl. 4 steel bridges, 3 box culverts. (Maryland).

BUILDINGS—LB & CA

▲ **Caristo Constr. Corp.**, 26 Court St., Brooklyn 2, N. Y. CA **$2,317,000.** (4 bidders) general constr., JUNIOR HIGH SCHOOL 33, Stockton and Floyd Sts. and Tompkins Ave., BROOKLYN, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 12/19, under LB.

▲ **Colmar Constr. Co.**, 364 Gold St., Brooklyn 1, N. Y. CA **$1,711,000.** general constr. PUBLIC SCHOOL 261, Pacific, Hoyt and Smith St., BROOKLYN, N. Y. Director, Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 1/4, under LB.

▲ **John T. Brady Co.**, 606 W. 47 St., New York 19, N. Y. CA **$2,467,000.** general constr. JUNIOR HIGH SCHOOL 61, Empire Blvd., New York Ave., and Sterling St., BROOKLYN, N. Y. Director, Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 1/4, under LB.

▲ **M. Melnick & Co., Inc.**, 225 Willow Ave., New York 54, N. Y. LB **$1,557,000.** (2 bidders) general constr. new addn. to and modernization of existing Bushwick HIGH SCHOOL, Irving Ave. and Woodbine St., BROOKLYN, N. Y. Director, Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y., Bids Dec. 22;
Sam Berley Heating Corp., 112 DeKalb Ave., Brooklyn 1, N. Y. LB **$369,198.** (4 bidders) heating work, (Brooklyn, N. Y.);
Theodore Kaish, 232 Franklin Ave., Brooklyn 5, N. Y. LB **$621,800.** electrical work, (Brooklyn, N. Y.).

▲ **Mill View Homes,** c/o Morris Rothstein & Son, archts., 186 Joralemon St., Brooklyn 2, N. Y. Owner Builds **$1,500,000.** 68 HOUSES, E. 59 St. between Ave. T and Ave. U, BROOKLYN, N. Y.

▲ **C. W. C. Constr. Corp.**, 105 Court St., Brooklyn 2, N. Y. CA **$1,648,000.** general constr., PUBLIC SCHOOL 129, Convent Ave. and W. 130 St., NEW YORK, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 12/21, under LB.

▲ **Caristo Constr. Corp.**, 26 Court St., Brooklyn 2, N. Y. CA **$2,203,000.** general constr. JUNIOR HIGH SCHOOL 139, Brook Ave., E. 141 St., and E. 142 Sts., Bronx Boro, NEW YORK, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 12/5, under LB.

▲ **Caristo Constr. Corp.**, 26 Court St., Brooklyn 2, N. Y. CA **$4,060,000.** (3 bidders) general constr., New York SCHOOL of PRINTING, W. 49 and W. 50 Sts., between Ninth and Tenth Aves., Manhattan Boro, NEW YORK, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Grand total $5,448,000. CD 12/8, under LB;
Afgo Engineering Corp., 475 Adelphi St., Brooklyn 17, N. Y. CA **$538,000.** (6 bidders) heating work, (New York, N. Y.);
Bank Electrical Co., 126 W. 32 St., New York 1, N. Y. CA **$850,000.** electrical work, (New York, N. Y.).

▲ **Grayco Builders,** 106-21 Continental Ave., Forest Hills, N. Y. CA **$1,624,000.** general constr., PUBLIC SCHOOL 41, W. 11 St. Ave. of Americas and Greenwich Ave., Manhattan Boro, NEW YORK, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 12/21, under LB.

▲ **Planet Constr. Corp.**, 11 W. 42 St., New York 36, N. Y. CA **$2,673,000.** (2 bidders) general constr., JUNIOR HIGH SCHOOL 143, W. 231 St., Sedgwick Ave., and Kingsbridge Terrace, Bronx Boro, NEW YORK, N. Y. Director, Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 12/12, under LB.

▲ **Planet Constr. Co.**, 11 W. 42 St., New York 36, N. Y. CA **$2,686,000.** general constr. JUNIOR HIGH SCHOOL 101, Lafayette, Huntington, and Brinsmade Aves., Bronx Boro, NEW YORK, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. CD 1/4, under LB.

▲ **Country Club Homes, Inc.**, c/o C. J. Kordys, archt., 116 Passaic St., Passaic, N. J., Owner Builds, **$2,000,000.** 122 HOUSES on tract on Broad St., opposite Broadacres Golf Club, BLOOMFIELD, N. J.

▲ **A. W. Alberto,** 4528 Chestnut St., Phila., Pa. CA **$2,000,000.** RESIDENTIAL DEVELOPMENT, 125 units, Upper Dublin Twp., FORT WASHINGTON, PA. Fairway Estates, 20401 N. 33 St., Phila., Pa.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
January 17 South Carolina January 24 Tennessee
January 25 Virginia
STREETS AND ROADS
January 17 South Carolina January 24 Tennessee
January 25, February 29 Louisiana

BUILDINGS—BA

▲ **Tenn., Memphis**—STEAM PLANT—BA 1/26—Memphis Light, Gas & Water Comn., 2996 Hy. 61 S., three steam boilers and steel framework, each equal in height to 12 story bldg., for three 250,000 kilowatt generators of Memphis $140,000,000 steam plant. Est. $25,000,000. Burns & Roe, 233 Broadway, New York, N. Y., engrs. CD 8/26.

HEAVY CONSTRUCTION—LB & CA

▲† **Agnew-Joseph Co.**, Ronceverte, W. Va., CA **$2,745,999.** relocation of Baltimore & Ohio R. R., Section 2, Sutton Reservoir, Elk River, WEST VIRGINIA. U. S. Eng., 237 Fourth Ave., Huntington 19, W. Va. Bids Nov. 17, awarded Dec. 23. CD 11/22, under LB.

BUILDINGS—LB & CA

▲† **Algernon Blair, Inc.**, 1st Natl. Bank Bldg., Montgomery, Ala., LB **$1,765,739,** 127 units permanent HOUSING, ENG-44-110-56-13, FORT EUSTIS, VA. U. S. Eng., foot of Front St., Norfolk 1, Va. Bids Dec. 21. CD 12/1.

▲ **Badger Mfg. Co.**, 230 Bent St., Cambridge, Mass., CA Est. **$2,500,000.** PLANT, PORT ST. JOE, FLA. Glidden Co., Union Commerce Bldg., Cleveland 14, O. Awarded Dec. 15. CD 12/1.

▲† **Algernon Blair, Inc.**, First National Bank Bldg., Montgomery, Ala. CA **$2,969,781,** est. $2,516,565. (7 bidders) permanent HOUSING, ENG-15-029-56-36, FORT KNOX, KY. U. S. Eng., P. O. Box 59, Louisville, Ky. CD 12/29, under LB.

▲ **Sullivan & Cozzart,** 822 W. Kentucky St., Louisville, Ky. CA Est. **$5,000,000.** 420,000 sq. ft. L-shaped SHOPPING CENTER, incl. 75 stores, parking lot, Preston Hy. and Durret Lane, LOUISVILLE, KY. Plaza Centers, Inc., Wm. A. Gardner, pres., Coleman Bldg., 309 S. Third St., Louisville, Ky. Awarded Dec. 30. CD 11/4/54.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
January 19 Wisconsin
STREETS AND ROADS
January 19 Wisconsin

BUILDINGS—BA

▲ **Mich., Ionia**—PRISON—BA 1/19—State, A. N. Langius, dir. State Bldg. Dpt., Lewis Cass Bldg., Lansing, first phase, medium security prison, incl. 5 bldgs. $2,500,000, Extended date. J. & G. Daverman Co., 924 Grandville Ave. S. W., Grand Rapids, archts. CD 11/29.

▲ **Mich., Flint**—MUNICIPAL CENTER—BA 2/13—City, Harry K. Cull clk., City Hall, Flint Municipal Center, incl. 4 story, 80x320 ft. city hall; 1 story, bsmnt., 70 ft. diameter auditorium, 3 story, 62x262 ft. police bldg.; 2 story, bsmnt., 65x111 ft. courts bldg.; 1 story, 54x104 ft. boiler-compressor bldg. $5,200,000. Plans deposit $200 for general, $100 mechanical, $100 electrical, $50 each for fire protection, pneumatic tube system, elevators, jail equip., landscaping, special office furnishing, all refundable, H. E. Beyster & Assoc., Inc., 700 Griswold St., Detroit, engr.-archt. CD 2/9/54.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15,
O.—**V. N. Holderman & Sons, Inc.**, 890 Oakland Park Ave., Columbus, O., CA **$3,873,704,** est. $4,384,000. Type T-71 and structures 10.251 mi. U. S. R. 25, Sects. 0.00, 13.29, IN-963 (3), Allen and Auglaize Counties;
O.—**Ferguson & Edmondson Co.**, 407 Keystone Bldg., Pittsburgh, Pa., CA **$1,382,987,** est. $1,364,100, Type T-35 on B-20 and structures 3.727 mi. U. S. R. 6, Sects. (6.41-7.95), F-44 (4), Lorain Co.;
O.—**Frank Mashuda Companies Associated,** 1201 Grant Bldg., Pittsburgh, Pa., CA **$2,860,825,** est. $3,140,000. Type T-71 and structures, U. S. R. 21, Sect. 0.23, F-1010 (2), Summit Co.; CA **$4,132,346,** est. $4,316,500, Type T-71 and structures 9.506 mi. U. S. R. 21, Sect. 4.31, F-1010 (1), Summit Co.;
O.—**Silvestri Brothers,** 713 Andrews Ave., Youngstown, O. CA **$879,486,** est. $1,051,600, Type T-71 and structure, U. S. R. 422, Sect. 0.63, Mahoning Co. Grand total $13,129,348. Bids Dec. 20. CD 12/29, under LB.

▲ **ILLINOIS**—State Div. Hys., Dpt. P. Wks. & Bldgs., Springfield,
S. J. Groves & Sons Co., 1104 W. Reynolds St., Springfield, Ill., CA, **$1,976,360.** c. conc. 5.03 mi. U. S. 66, c. conc. 0.92 mi. U. S. 40, 1 grade separation 1 railroad subway, Madison Co. Bids Nov. 1, awarded Dec. 12. CD 11/7, under LB.

▲ **Northern States Co.**, 33 N. La Salle St., Chicago 2, Ill., CA, **$2,699,742.** general imprvs. Stickney Treatment Works, CHICAGO, ILL. Sanitary District of Chicago, 910 S. Michigan St., Chicago 5, Ill. Awarded Dec. 23. CD 1/2/53.

BUILDINGS—LB & CA

▲ **Certified Realty Co.**, 600 W. 119 St., Chicago, Ill., Own Forces, **$3,500,000.** 200 HOMES area of 105 and Drake Sts., CHICAGO, ILL.

▲ **Sherman Olson Co.**, 219 N. Kirkpatrick St., Chicago, Ill., CA, **$2,300,000.** 220,000 sq. ft. WAREHOUSE, Belmont & Soo Line RR, FRANKLIN PARK, ILL. Crane Co., 816 S. Michigan St., Chicago 54, Ill. Awarded Dec. 27. CD 2/9.

▲ **Robert Houston & Sons.** 7355 North Ave., River Forest, Ill., Own Forces, **$1,750,000,** 100 HOMES, PALATINE, ILL. J. M. McClaren, 5943 Midway Park, Chicago, Ill., archt.

(Continued on page 72)

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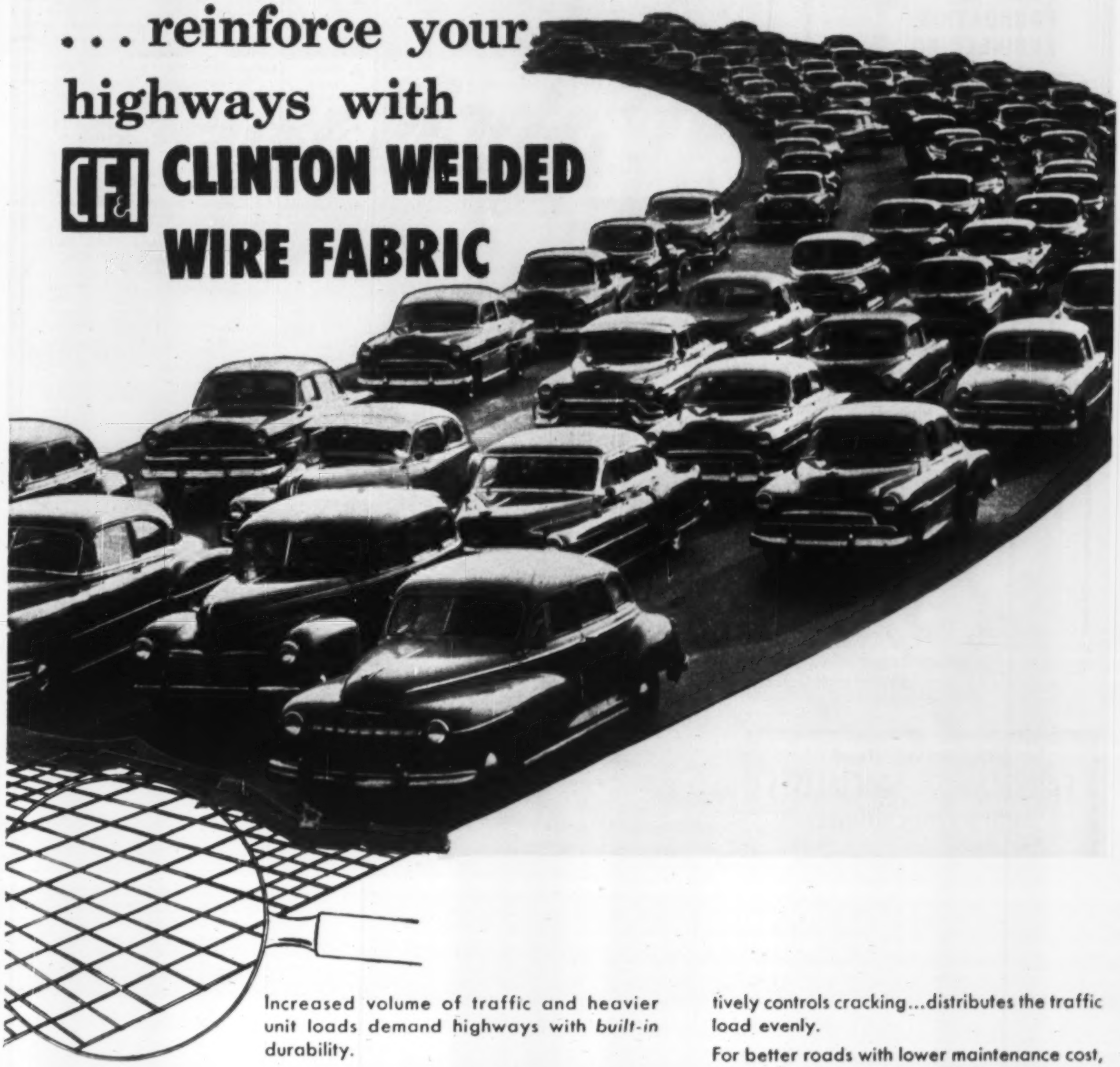

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(Continued from page 70)

▲ **Mutual Constr. Co.,** 155 and Cottage Grove, Soutn Holland, Ill., Own Forces, **$1,500,000.** 115 HOMES, SOUTH HOLLAND, ILL.

▲ **John P. McCann,** 1701 Grand Ave., Waukegan, Ill., Own Forces, **$13,000,000.** 870 HOMES, WAUKEGAN, ILL.

▲ **Durable Constr. Co.,** 127 N. Main St., Wheaton, Ill., Own Forces, **$3,000,000,** 140 HOUSES, WHEATON, ILL. Robt. H. Salisbury, 213 W. Wesley St., Wheaton, Ill., archt.

▲ **Surety Builders, Inc.,** 323 N. York Rd., Elmhurst, Ill., Own Forces, **$3,000,000.** 200 HOMES, WHEATON, ILL.

▲ **John Philippe,** Rohlwing Rd., Palatine, Ill. Own Forces, **$1,500,000.** 99 HOMES, WHEELING, ILL. R. T. Morrisett, 34 N. Broadway, Palatine, Ill., archt.

▲ **The Austin Co.,** 227 Curtis Bldg., Detroit, Mich. CA, Est. **$1,500,000.** 240x520 ft., 145,000 sq. ft. PLANT addn., to constr. machinery division, BENTON HARBOR, MICH. Clark Equipment Co., George A. Spatta, pres., Benton Harbor, Mich.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

▲† **Tex., Abilene**—RUNWAY EXTENS.—BA 1/24—U. S. Eng., Box 1600, Fort Worth, runway extens., incl. 81,000 sq. yds. concrete pavement 10 to 19 in. thick Abilene Air Force Base, ENG-41-443-56-55. Est. $1,000,000-$3,000,000. CD 12/30.

▲† **Okla., Enid and Tex., Sherman**—DORMITORIES—BA 2/8—U. S. Eng., Box 61, Tulsa, Zone 2, Okla., airmen's dormitories at Vance Air Force Base, Enid, Okla. and Perrin Air Force Base, Sherman, Tex., Inv. No. ENG-34-066-56-44. $1,000,000-$3,500,000. CD 10/7, under Sherman, Tex.

BUILDINGS—BA

▲ **Iowa, Cherokee**—HIGH SCHOOL—BA 1/20—Immaculate Conception Parish, Cherokee, high school. $2,000,000.

HEAVY CONSTRUCTION—LB & CA

▲† **S. J. Groves & Sons Co.,** 500 Wesley Temple Bldg., Minneapolis, Minn., CA **$4,486,398** (for asph. type surf.) const. paving and jet fuel storage facilities, Air Force Base, GRAND FORKS, N. D. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Dec. 20. CD 11/28, under LB.

▲† **U. S. Eng.,** 1709 Jackson St., Omaha, Neb., rejected bids Dec. 20, airmens dormitories and recreation field, Ellsworth Air Force Base, Inv. 25-066-56-25, RAPID CITY, S. D. LB **$1,710,790,** CD 12/22, under LB.

▲† **List & Clark Constr. Co.,** Railway Exchange Bldg., Kansas City, Mo. CA **$4,238,093.** excavation of spillway and constr. embankment Stage III, Tuttle Creek Dam and Reservoir, Riley Co., Inv. 23-066-56-49, KANSAS. U. S. Eng., Federal Office Bldg., Kansas City, Mo. CD 12/16, under LB.

BUILDINGS—LB & CA

▲ **Service Realty & Investment Co., Inc.,** Robert Silvertstein, pres., 100 E. State St., Peoria, Ill. Owner Builds. **$3,000,000.** Village SHOPPING CENTER, former Sunset Golf Course, SIOUX CITY, IOWA.

▲ **Fruin-Colnon Contg. Co.,** 1706 Olive St., St. Louis 3, Mo. CA Est. **$3,000,000.** 1 story ADMINISTRATION BLDG., three 2 story, ground floor OFFICE BLDGS., 250 acre tract adjacent to Lindberg Blvd. and Olive St. Rd., CREVE COEUR (ST. LOUIS 24 P.O.), MO. Monsanto Chemical Co., 1700 S. Second St., St. Louis 4, Mo. Vincent Kling, 11 and Walnut Sts., Phila., Pa., archt. CD 7/27/54;
Wm. H. and Nelson Cunliff Co., 3320 Lindell Blvd., St. Louis 3, Mo. CA Est. **$1,000,000.** 2 story, ground floor INORGANIC CHEMICALS LABORATORY on 250 acre tract adjacent to Lindbergh Blvd. and Olive St. Rd. Holabird & Root & Burgee, 180 N. Wabash St., Chicago, Ill., archts. (Creve Coeur, St. Louis 24 P.O.).

▲ **Martin K. Eby Constr. Co., Inc.,** 610 N. Main St., Wichita, Kan. CA **$1,497,450.** general constr., BANK addn., WICHITA, KAN. Fourth National Bank, N. Market St., Wichita, Kan.;
Ripstra & Turner Co., 1015 E. Douglas St., Wichita, Kan. CA **$690,117.** mechanical work (Wichita, Kan.).

▲† **C. H. Leavell & Co.,** 1900 Wyoming St., Box 1451, El Paso, Tex., LB **$2,268,346.** 250-unit NCO family HOUSING, Fort Bliss, ENG-29-005-56-49, EL PASO, TEX. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Dec. 28. CD 12/13.

▲† **Texarkana Constr. Co.,** Box 1079, Texarkana, Tex. CA **$3,267,141.** 228 HOUSING units, ENG-41-443-56-45, FORT HOOD, TEX. U. S. Eng., 100 W. Vickery Blvd., Fort Worth, Tex. Bids Dec. 20. CD 12/22, under LB.

▲ **Goodrich-Gulf Companys,** Port Neches, Tex. abandoned synthetic rubber PLANT expansion. PORT NECHES, TEX. **$1,500,000.** CD 11/16.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
January 26 California

▲† **Washington**—BA 2/16—U. S. Eng., City-County Airport, Walla Walla, first-step cofferdam for Ice Harbor lock and dam on Snake River, Pasco, Inv. 56-40. Plans deposit $100. CD 8/17.

BUILDINGS—BA

▲ **Calif., Los Angeles**—FACTORY—BA 1/20—Torrington Mfg. Co., c/o Craig Ellwood, 9849 Yokum Dr., Beverly Hills, 50,000 sq. ft., concrete block factory. $2,500,000. Marcel Brener, 113 E. 37 St., New York, N. Y., archt.

▲ **Wash., Tacoma**—COUNTY-CITY—BA 2/14—Pierce County, Co. Courthouse, 10 story, steel frame County-City bldg. $5,000,000. A. G. Lumm, 321 S. 11 St., archt.

▲ **Calif., Santa Clara**—MILL—BA About 4/30—California Container Corp., 2500 DeLaCruz Blvd., paper board mill, Albert C. Martin Co., 333 Beaudry St., Los Angeles, archt. CD 12/20.

HEAVY CONSTRUCTION—LB & CA

▲† **Morrison-Knudsen Co. Inc.,** 319 Broadway, Boise, Idaho, CA **$2,093,754,** railroad relocation, Eagle Gorge Dam, Inv. 56-20, Kanasket, WASHINGTON. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids Dec. 13. CD 12/16, under LB.

▲† **Ferranti Electric, Inc.,** 30 Rockefeller Plaza, New York, N. Y., CA **$2,080,940,** 21 transformers, The Dalles Dam, Wasco Co., CIVENG-35-026-56-34, OREGON. U. S. Eng., Pittock Block, Portland, Ore. Bids Nov. 1, awarded Dec. 27. CD 11/15, under LB

▲† **San Francisco Bridge Co.,** 140 Montgomery St., San Francisco, Calif. LB **$3,382,000** (3 bidders) dredge outer turning basin, Naval Air Station. ALAMEDA, CALIF. Dist. P. Wks. Officer, Twelfth Naval Dist., San Bruno, Calif. Bids Dec. 21. CD 12/7.

BUILDINGS—LB & CA

▲ **Carl N. Swenson Co. Inc.,** 1095 Stockton Ave., San Jose, Calif., CA, **$1,500,000,** second unit of Sunnyvale HIGH SCHOOL, SUNNYVALE, CALIF. Fremont Union High School Dist., Sunnyvale, Calif. CD 10/21.

CANADA

BUILDINGS—SLC

▲ **Alta., Calgary**—DEPARTMENT STORE—Hudson's Bay Co., Portage & Memorial Ave., Winnipeg, Man., soon lets contract 6 story, bsmnt., 110,000 sq. ft department store addn. $3,500,000. Moody & Moore 295 Broadway Ave., Winnipeg ,Man., and Rule, Wynn & Rule, 11422 Jasper Ave., Calgary, archts. CD 2/28.

HEAVY CONSTRUCTION—LB & CA

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto,
Dominion Bridge Co. Ltd., 1139 Shaw St., Toronto, Ont., CA, **$2,405,000.** Contract 55-200, part D, structural steel for superstructure of central 3-span section of Burlington High-Level Bridge, Burlington. Bids Nov. 9, awarded Dec. 29. CD 12/23, under LB.

BUILDINGS—LB & CA

▲ **Ellis-Don Ltd.,** Box 852, London, Ont., CA, **$1,972,894,** 2 WAREHOUSES and ADMINISTRATION BLDG., GATEHOUSE, utilities extensions, LONDON, ONT. Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. Bids Nov. 22. CD 11/2.

▲ **Pentagon Constr. Co. Ltd.,** 5005 Namur St., Montreal, Que., CA Est. **$2,000,000.** (10 bidders) PLANT EXTENS., 100,000 sq. ft. machine shop, 12,000 sq. ft. pattern shop, 2 story bsmnt., steel frame, brick constr., incl. office bldg., cafeteria, service bldg. and greenhouse, MONTREAL, QUE. Jenkins Bros. Ltd., 617 St. Remi St., Montreal, Que. Bids Dec. 14, awarded Dec. 19. CD 11/30.

▲ **Pigott Constr. Co. Ltd.,** Pigott Bldg., Hamilton, Ont., CA, **$13,000,000-$14,000,000.** (7 bidders) general contract for bulk of 19 and 20 story Queen Elizabeth HOTEL, Dorchester St., MONTREAL, QUE. Canadian National Railways, R. O. Stewart, ch. engr. 360 McGill St., Montreal, Que. Bids Dec. 16, CD 10/18;
E. G. M. Cape & Co., 620 Cathcart St., Montreal, Que., CA foundations and concrete work for first two floors of Queen Elizabeth Hotel (Montreal, Que.);
Dominion Bridge Co. Ltd., Lachine, Que., CA, structural steel work, Queen Elizabeth Hotel, (Montreal, Que.)

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

▲† **A. C. Samford, Inc.,** P.O. Box 1229, Albany, Ga. and **Markowitz Bros., Inc.,** 5600 N.E. 4th Ave., Miami 37, Fla., CA Approx. **$4,500,000.** POL storage and distr. sys. at Rota, Moron, Torrejon and Zaragoza for Bureau Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash. 25, D. C.-U. S. Air Bases, SPAIN. Brown-Raymond-Walsh, Prime Contractors, Eng. Dpt., Edificio Espana, Madrid, Spain. Bids Dec. 7. (Correction—contractor's name). CD 12/21. under LB.

FOREIGN

HEAVY CONSTRUCTION—LB & CA

▲ **D. and C. and William Press,** London, England and **Societe Anonyme Ossude,** France, CA Est. **$14,000,000.** constr. 75 mi. road from Jalawla to Derbend-1-Khan reservoir under constr. incl. bridge and approx. 2,300 ft. tunnelling through hard rock. IRAQ. Development Bd., Ministry of Development, Baghdad, Iraq.

(Proposal Advertisements see pp. 90 & 91)

BRIXMENT

Better Mortar for Blocks

WHY IS GOOD MORTAR IMPORTANT?

Because of their size and weight, concrete blocks require mortar with "body", plasticity and water-retaining capacity. Brixment meets all these requirements. It has the *body* necessary to support the weight of the unit and hold it up to the line. It has the *plasticity* necessary to prevent the mortar from falling off the long head joint, while the block is being placed in the wall. It has high *water-retaining capacity*, which gives the bricklayer more time to shift and adjust the block to its final position before the mortar stiffens.

It is the combination of these characteristics that makes Brixment the leading masonry cement for concrete block as well as for brick.

BRIXMENT
A
WATERPROOFED
CEMENT
FOR
MASONRY
BRIXMENT

Louisville Cement Company . . . Louisville 2, Kentucky

LEGAL CASES for CONTRACTORS, ARCHITECTS, and ENGINEERS

Just Published!

In readily understandable language, a noted engineer-attorney discusses 52 important legal problems that may crop up on construction projects; cites actual cases which set forth or sustain principles involved. Helps you act preventively before the situations described arise; know when to seek competent legal advise of an attorney. **By I. Vernon Werbin, Member, N.Y. Bar and Licensed Prof. Eng. 487 pp., $6.00**

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A handy legal guide to forewarn you of common pitfalls in your field . . . help for preventing costly lawsuits. Describes for situations reviewing typical problems arising out of construction contracts. Easily understood by the layman, it gives facts and contract provisions in each situation, and cites cases to sustain the principles of law set forth. **By I. Vernon Werbin, 374 pp. $6.00**

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Discusses 46 different legal problems that arise in construction contracts, showing engineers, architects, contractors, and attorneys the attitude courts have taken toward their problems. Provides cases which are **typical** of important legal problems involving construction contracts—giving you a compact manual that can help you avoid the legal pitfalls in your work. Shows actual language of contract provisions . . . quotations from courts' decisions . . . material facts on each case, etc. **By I. Vernon Werbin, 267 pages, $5.00**

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Over 500 questions and complete answers to help engineers pass state license examinations. Covers mechanical, electrical, civil, and chemical engineering, and includes engineering economics and land surveying. Latest questions—suitable for all states. Author has worked on New Jersey examination preparation for 19 years. By William S. LaLonde, Jr., 462 pp., 234 illus., $6.50.

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Unit Prices

Flood Control, Mass.

To correct flooding conditions in North Adams, Mass., a $2,178,611 contract covers diversion of the Hoosic River, construction of approximately 5,390 lin ft of flood walls, chute pavement and allied work including protection of existing structures, removal of structures, bridges abutments, and extension of drainage facilities. Work was awarded to the Petricca Construction Company by the Corps of Engineers, New York District, at a price less than 1% below the engineer's estimate.

Both highway and water transportation is available to the site. The distance to the railhead is one mile.

Cast iron pipe, 4 in. and more in diameter, has to meet with Federal Specifications WW-P-421, and pipe, 4 in. and less in diameter, specifies WW-P-421, class 150. Six to 6½ bags of cement are required per cubic yard of Class A concrete.

Curves are modified California spirals. These are used in rectangular flood control channels where the alignment is curved, the bottom is superelevated and transition from curve to tangent is graduated much like a railroad spiral. This is necessary to prevent formation of transverse waves in rapidly flowing channels. Tables for such spirals were established by experimentation by the Corps of Engineers, Los Angeles District.

The bidders include:

1C	Petricca Construction Co., Pittsfield, Mass.	$2,178,611
2	Carlo Bianchi and Co., Inc., Framingham, Mass.	$2,298,847
4	S. J. Groves & Sons Co., Minneapolis, Minn.	$3,373,517
EE	Corps of Engineers, U. S. Army	$2,191,999

Bids: 10-5-55 Items:	Unit	Quantity	Unit Prices 1C	Unit Prices 2
Divert river & protect traffic	ls	job	$275,000	$175,000
Clear site	ls	job	37,610	60,000
Excav, channel	cy	64,000	1.15	2.00
trench	cy	65	3.75	5.00
rock	cy	180	10.00	20.00
Protect exist struct, S branch	ls	job	25,000	7,500
N br,				
141+75-156+00	ls	job	33,550	11,000
156+00-172+50	ls	job	50,000	25,000
172+50-195+18.5	ls	job	57 303	45,000
Fill compact, pervious	cy	42,000	1.00	2.50
random	cy	10,900	0.75	2.50
Gravel	cy	9,000	5.00	2.50
Riprap, dumped	cy	545	1.90	10.00
Concrete walls	cy	8,200	50.60	49.00
chute paving	cy	16,560	19.65	25.00
bridge abutments	cy	2,600	26.60	35.00
Remov exist bri abutments N br,				
156+00-172+50	ls	job	5,000	4,500
172+50-195+18.5	ls	job	2,125	5,000
Portland cement	bbl	42,750	4.20	4.75
Steel reinf	lb	2,723,600	0.13	0.14
Water stops	lf	5,800	2.40	2.75
Piling, steel sheet,				
MA22	sf	1,000	2.90	3.50
Z.27	sf	5,300	3.40	4.00
Fence, chain link	lf	11,380	1.90	2.00
Drains, longitudinal	lf	12,910	2.95	2.00
Remov exist struct, S br	ls	job	2,250	500.00
N br,				
141+75-156+00	ls	job	4,375	500.00
156+00-172+50	ls	job	7,150	7,500
172+50-195+18.5	ls	job	4,500	3,000
Remov exist stl sheet pil S br	ls	job	1,062	500.00
Remov exist stl sheet pil N br				
141+75-156+00	ls	job	1,332	1,000
156+00-172+50	ls	job	1,000	1,500
172+50-195+18.5	ls	job	625.00	1,500
Topsoil & seeding	ac	4	2,425	1,500
Load tests	ea	5	1,000	1,000
Ditch, paved	lf	260	2.40	10.00
Rais exist superstruct & capp exist abutments	ls	job	6,320	8,000
Misc work S br	ls	job	2,325	2,000
N br,				
156+00-172+50	ls	job	1,400	4,500
172+50-195+18.5	ls	job	850.00	4,000
Manholes, drainage	ea	10	1,125	1,200
Ext drain pipes, S br	ls	job	1,625	2,200
N br,				
141+75-156+00	ls	job	1,400	2,000
156+00-172+50	ls	job	950.00	4,300
172+50-195+18.5	ls	job	1,750	7,500
Drain gates, automc,				
8"	ea	4	65.00	50.00
12"	ea	4	90.00	60.00
15"	ea	1	110.00	75.00
24"	ea	2	205.00	150.00
30"	ea	1	315.00	210.00
4"	ea	1	40.00	50.00
10"	ea	1	81.00	60.00
18"	ea	1	148.00	100.00
Sluice gate, hand op,				
30"	ea	1	1,287	1,200
24"	ea	1	981.00	1,000
Drop inlets	ea	23	610.00	600.00

Time allowed: 860 calendar days
Liquidated damages: $75 per day

Three Concrete Bridges on County Roads in Idaho

For a total of $34,683, the Idaho State Highway Department replaces inadequate structures by two 52 ft bridges on Greenleaf South Road and one 78.1 ft bridge on Shelp South Road in Canyon County, Idaho.

The contract went to J. O. Young & Sons, Nampa, Idaho. Their bid is under the high bid by 18.5%. Max E. Jones, Boise, Idaho, is resident engineer and C. L. Varian, also Boise, is district engineer.

Stringers are precast concrete. Six sacks per cubic yard must be the cement content of Class A concrete.

Prevailing wage rates fixed by the Idaho Department of Labor include $1.95 for unskilled laborers, $2.00 for riprap men (hand placed), $2.05 for tampers, $2.70 for reinforcing ironworkers, $2.95 for structural ironworkers, $2.60 to $2.75 for cement masons and $2.38 for concrete mixers.

The three bidders are:

1C	J. O. Young & Sons, Nampa, Idaho	$34,683
2	J. H. Wise & Son, Boise, Idaho	$37,279
3	Hansen & Parr Construction Co., Spokane, Wash	$42,522

Bids: 11-8-55 Items:	Unit	Quantity	Unit Prices 1C	Unit Prices 2
Excav for structures	cy	580	$2.25	$2.75
Remov bridges, 144+45 & 184+98	ea	2	500.00	910.00
13+48	ea	1	500.00	930.00
Tamping, mechanical	cy	270	2.00	2.50
Conc, Cl A precast	cy	56	65.00	71.50
pour in place	cy	232	62.00	71.50
Cl C	cy	35	50.00	35.00
Reinf, metal	lb	57,670	13.50	13.00
Structural steel	lb	2,300	40.00	40.00
Stl bm H rail, conc stringrs	lf	425	6.00	3.80
Riprap, hand placed	cy	30	10.00	13.50
Project markers	ea	3	18.00	20.00

Scheduled to be completed: 4-1-56
Liquidated damages: $30.00 per day

Contractor Takes Tractair to Church and Solves Unusual Construction Problem

Remodeling of this large church depended on plenty of air power.

"Inside" job was confined, crowded, with poor footing.

Here's how a construction firm found the answer with a Le Roi Tractair.

A self-propelled Le Roi Tractair compressor went to church recently to help the Caspian Construction Company of Caspian, Michigan with an unusual air-power problem.

The job was different and difficult. St. Mary's Church in Wausau, Wisconsin was to be remodeled inside, from the ground up. Plenty of air power was needed to work essential tools. But long hose wouldn't work because of friction loss and danger of abrasion from debris. Not even small trucks could get inside the building.

To solve the problem, a Le Roi 125 Tractair, capable of working in crowded conditions . . . maneuvering in tight corners . . . "stepping" through loose, deep sand, was driven into the church. In this way continuous air power was provided for the job, without tying up additional equipment or men.

The contractor states, "The Tractair was a life-saver on this job, due to the fact that it is so mobile. It did a very fine job for us and served all of our needs at a very low cost of operation."

Ready to work at any job. Tractair, a combination 42-hp wheel tractor and 125-cfm air compressor, can be equipped with a variety of drilling attachments, front-end loader, backhoe, rotary sweeper, backfill blade, and operates Le-Roi-Cleveland air tools — rock drills, pavement breakers, clay spades, backfill tampers.

On this job, the Tractair functioned as a specialized tool providing a complete answer to the need for dependable air power inside the church. The Le Roi Tractair was also used outside the church to break concrete, along with a portable Le Roi Airmaster compressor. On many jobs, the Tractair can replace a truck-towed compressor with a 50% saving in equipment costs and manpower — and unlimited savings in time.

Le Roi Division of Westinghouse Air Brake Co., Milwaukee 1, Wisconsin also manufactures portable and stationary air compressors, air tools, and engines. Write today for information about any of these products.

T-48

(Above) Work outside St. Mary's church in Wausau, Wis., used Le Roi Tractair and Le Roi Airmaster compressor to break concrete.

(Below) Inside church, Le Roi Tractair provided air power when and where needed because it can move about in confined, crowded places.

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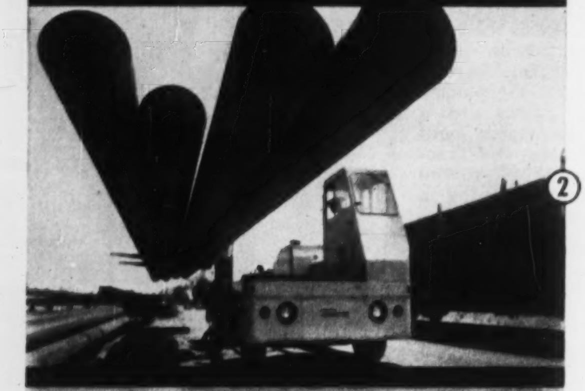

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② **BAKER-RAULANG TRAVELOADER**
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③ **DART UNDERGROUND TRUCK**
Vickers Hydraulics operates the reversible conveyor floor that permits fast and easy trim when loading, and then rapid dumping. Also has Vickers Hydraulic power steering for shuttle operation.

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$4.60	$4.50	$4.65	$9.25	......	$94.50	$113.00	$5.825	$7.90	$5.625	......
Chicago Area	4.60	4.50	4.65	9.25	$5.45	94.50	113.00	5.825	7.90	5.625	......
Pittsburgh Area	4.60	4.50	4.65	9.25	5.45	94.50	113.00	5.825	7.90	5.625	$11.50
Buffalo Area	4.60	4.50	4.65	9.25	5.45	94.50	113.00	5.825	7.90	5.625	11.50
Cleveland	......	......	4.65	9.25	5.45	......	......	......	......	......	11.50
Youngstown Area	......	......	4.65	......	......	......	......	......	7.90	......	......
Geneva	4.60	4.50	......	......	......	......	......	......	......	......	......
Los Angeles	......	......	......	......	5.45	......	......	......	7.90	......	......
Pueblo	4.90	5.35	5.10	......	......	......	95.00	5.825	7.90	5.625	12.40

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS Rail steel	EXPANDED METAL LATHk Per 100 sq. yd., carload lots Std. diamond mesh. 3.4 lb.	EXPANDED METAL LATHk Std. ribbed 3.4 lb.
Atlanta	$7.63	$7.42	$7.42	$38.00‡	$42.00‡
Baltimore	7.63	7.06j	....	44.00	47.00
Birmingham	7.28t	7.08t	7.08t	51.00p	57.00p
Boston	8.13a	7.82	7.82	44.00	48.50
Chicago	7.43	6.23gu	6.23gu	49.00‡	60.00‡
Cincinnati	7.75ak	7.56rv	....	41.00mn	45.50mn
Cleveland	7.91	6.41c	....	41.00‡	45.50‡
Dallas	9.05	7.25	7.25	49.00	52.00
Denver	8.75	7.80c	....	54.00n	60.00n
Detroit	7.75	7.38	....	55.50	66.00
Kansas City	7.95a	7.75	....	49.00	60.00
Los Angeles	8.15fd	7.60	....	54.50	60.50
Minneapolis	7.64d	8.10b	8.10b	42.50	47.00
Montreal	7.70-8.15iC/7.75-8.15A	7.50/8.65i	7.50/8.65	46.00h	51.00h
New Orleans	....	7.05akz	....	66.00	60.00
New York	7.79	7.35y	7.35y	44.50no	51.00no
Philadelphia	8.04	7.30/7.45		42.50‡	47.00‡
Pittsburgh	6.98	7.37z	6.95	39.78	41.90
St. Louis	7.83s	6.75c	6.75c	57.00l	59.00l
San Francisco	8.20	7.45j	....	47.25	52.25
Seattle	5.35e	7.00ej		55.00nr	61.00nr
Toronto	8.40*	6.40	6.40	53.50nq	67.50nw

Quantity extras; per cwt: under 100#, +$6; 100-399#, +$3; 400-999#, +1.25; 1000-1999#, +30¢; 2000-4999#, base price; 5000-9999#, −10¢; 10,000-19,999#, −30¢; 20,000-29,999#, −50¢; 30,000# and up, −70¢

EXTRAS, per cwt—•Quantity: less than 700#, +50¢; 700-1499#, +25¢; 1500-7999#, +10¢. •Size†: #2 +$2.20; #3 +$1.10; #4 +80¢; #5 +62.5¢; #6, #7 +45¢; #8, #9, #10, #11 +35¢. •Bending: heavy, +80¢; light, +$2 (except in New York City and surrounding metropolitan area where bending must be done on the job). •Engineering (details and placing from designs by others): over 500 tons, +45¢; 200-500 tons, +50¢ but not over $4500; 20-200 tons, +60¢ but not over $2000; 5-20 tons, +70¢ but not over $240; under 5 tons, +85¢ but not over $70. •Design only: +60¢.

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Joliet, Ill., Donora, Pa., Monessen, Pa. $3.40

4 × 12 in., No. 8 & 12 wires—
Joliet, Ill., Donora, Pa., Monessen, Pa. $2.47

6 × 6 in., No. 6 & 6 wires—
Joliet, Ill., Donora, Pa., Monessen, Pa. $3.57

•‡ Delivered •a 2000–9999# •b 10,000–15,999#, fob city •c 20 tons or over •d 10,000–19,999# •e fob plant •f incl. delivering in free zone •g CL •h list price; dominion tax exempt; add provincial and municipal taxes •i add dominion, provincial and municipal sales taxes •j intermediate and hard grade •k fob city •l delivered; contractor to do unloading •m copper alloy •n LCL •o asphalt coated •p del. of 500 sq. yd. or more. •q 3# •r 2% off for cash •s 2,000–4,999# •t add 15¢ del. •u add 6.25¢ switch •v incl 15¢ del. •w 3.5# •x add 5¢ switch •y add 30¢ del. •z add 10¢ del. •A American made. •C Canadian made. † Number system replaces inch system of classifying bar sizes. New system is based on number of eighth inches in diameter of bar. •* Aver. of Canadian & American.

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	C. I. PIPE PRICE INDEXa	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Pr Cl. 150	ASBESTOS CEMENT PIPE 12" Sew Cl. I	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s.	VITRIFIED SEWER PIPE std. 12 in. s.s.	VITRIFIED SEWER PIPE 24 in. ds.	VITRIFIED SEWER PIPE 36 in. ds.	CLAY DRAIN TILE ASTM C4-24 PER 1,000 ft., carload lots, f.o.b. 6 in.	CLAY DRAIN TILE 8 in.	CONCRETE SEWER PIPE Per ft., delivered: ASTMC 14-41 12 in.	CONCRETE SEWER PIPE 24 in.
Atlanta	113.6	$1.52	$2.53	$.545	$1.27	$4.82	$12.925			$0.90m	$3.40m
Baltimore	122.9	1.52	2.53	.595	1.1475	4.59v	12.095	$178.20	$274.80	1.01	2.75
Birmingham	109.3	1.52	2.53	.41	.81	3.55w	10.37w	260.00‡	440.00‡	1.25m	2.75m
Boston	125.5	1.54	2.32	.63qrt	1.215qrt	4.95qrt	12.505qrt	197.40r	303.60r	1.54mg	3.65mg
Chicago	122.9	1.52	2.32	.90m	1.74m	6.25m	19.00m	150.00‡	270.00‡	1.00	3.65
Cincinnati	118.0	1.54	2.40	.665l	1.2825l	4.905l	12.505	240.00	370.00	.80m	2.95m
Cleveland	123.6	1.54	2.40	.546s	1.053s	4.32t	11.48t	158.00m	245.65m	.85m	3.25m
Dallas	120.1	1.54	2.66	.439	.799	4.00b	9.17b			.49	1.60
Denver	129.0	1.62	2.66	.45n	.78n	3.48n				.74m	2.50m
Detroit	123.9	1.54	2.40	.80	1.55	6.15	16.80	240.00m	370.00m	.95	3.82
Kansas City	120.7	1.54	2.40	.59	1.055	4.54	12.75	250.00	480.00	.90	2.90
Los Angeles	131.1	1.62	2.32	.67l	1.46l	5.97l	14.89l	228.20l	348.90l	.95	2.75f
Minneapolis	131.0	1.57	2.53	.78mo	1.42mo	6.25mo				1.66h	4.47h
Montreal				1.07u	1.73u	5.52u	8.93u			1.17h	3.11j
New Orleans	116.0	1.52	2.53	.51	.925	4.91		280.00p	460.00p	.65	2.29
New York	121.5	1.54	2.32	.85	1.62	6.33	16.49			1.15	3.00
Philadelphia	120.9	1.52	2.32	.65	1.25	4.95v	12.65v	300.00‡	350.00‡	1.60h	3.95h
Pittsburgh	124.7	1.54	2.32	.468m	.864m	3.86m	9.78m	152.00	244.00	1.05h	2.50h
St Louis	119.3	1.52	2.40	.56	1.03	4.22	9.80	180.00l	380.00l	1.30l	2.80l
San Francisco	131.1	1.62	2.32	.74d	1.62d	6.59d	16.17d	235.00l	392.00l	1.05m	3.30m
Seattle	131.1	1.62	2.32	.65b	1.25b	6.29	17.75	200.00c		1.10k	2.85k
Toronto				.76	1.425	5.70		157.00	280.00	.87	3.05

*WROUGHT STEEL PIPE (Full standard weight) Discount from list; see footnote

Mill	2½ & 3 in., Butt Weld† Black %	2½ & 3 in., Butt Weld† Galv. %	3½ to 6 in., Lap Weld† Black %	3½ to 6 in., Lap Weld† Galv. %
Lorain, Ohio	29.00	11.75		
Aliquippa, Pa	29.00	15.25	19.50a	5.25a
Sparrows Pt., Md	27.00	9.75	13.50a	+4.25
Benwood, W. Va	29.00	11.75	18.50d	+0.75d
Youngstown, O	29.00	11.75		
Indiana Harbor, Ind	28.00	10.75	18.50ab	+0.75a
Sharon, Pa	29.00	11.75		
Wheatland, Pa.	29.30	11.75	16.50a	+1.25a
Etna, Pa	29.00	15.25	17.50d	3.25d
Fontana, Calif	17.05b	0.25b	8.00ab	+9.25ab

† Threaded and coupled. a 3½ to 4 in. b Continuous weld. c 5 and 6 in. d 6 in.

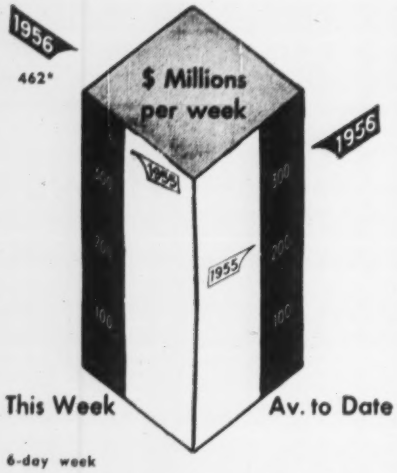
•‡ Delivered. •a PRICE INDEXES for CENTRIFUGAL CAST IRON PIPE (Include carload freight allowed to city). These also serve as the HISTORICAL RECORD of THE $ PER NET TON PRICE of CLASS B, B&S, PIT CAST IRON PIPE. F.O.B. Foundry Price Indexes Birmingham, Ala., 109.3; Burlington, N. J., 118.1. •b Extra strength ASTM C 200-44T •c 4-in., $90 •d SS361-A •e 30-in. •f 21 in. •g culvert pipe; reinforced, ASTM C 76-41 •h reinforced, ASTM C 75-41 •i reinforced, ASTM C 76-37 •j centrispun; no standard specs. in Canada •k 2% off for cash •l fob plant •m truck delivery •n LCL delivered, fob truck •o listed price based on LCL (no min.) •p freight allowed to destination in city •q ASTM C 13-40 •r CL fob origin, freight allowed •s 2 ft lengths •t 3 ft lengths •u CESA A 60-1941 specs. used •v standard strength •w ss; add 20% for d.s.

* WROUGHT STEEL PIPE: Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft. (*based on approx. $200 per net ton): Butt Weld ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. Lap Weld 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight rates plus 3% transportation tax to get destination price.

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: Butt Weld—1 in. black, + 50.25, galv., + 78.50; 1¼ in. black, + 50.25, galv. + 78.0, 1½ in. black, + 46.75 galv. + 74.25; Lap Weld—2½ in. to 3 in. black + 52.50 galv. + 78.50; 4½ in. to 6 in. black + 49.50 galv. + 73.75 Add freight rates plus 3% transportation tax to get destination price.

Construction Scoreboard

Contract Awards



6-day week

AMOUNT OF CONTRACTS LET (millions of dollars)

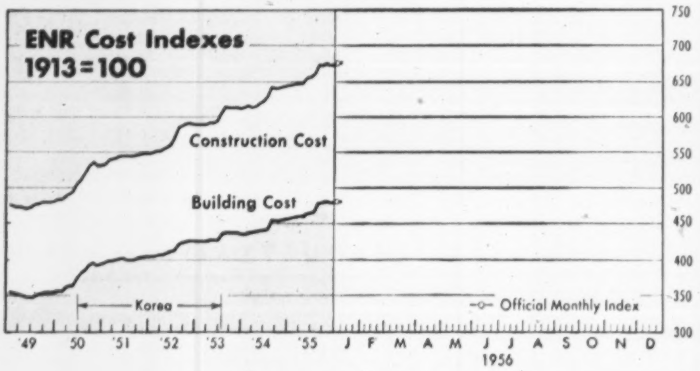
By Ownership	This Week	Cum 2 wk 1956	Cum 2 wk % Chge
Federal	$71.9	$98.7	—21
State and municipal	167.7	241.6	+41
Total public	239.6	340.3	+14
Total private	222.2	282.0	—41
U. S. Total	$461.8	$622.3	—20

By Type of Work	This Week	Cum 2 wk 1956	Cum 2 wk % Chge
Waterworks	$9.2	$10.9	—26
Sewerage	15.3	18.2	+21
Bridges	13.1	18.8	—27
Highways	44.5	92.5	— 1
Earthwork waterways	22.5	24.6	+130
Buildings:			
Public, excel. hsg.	85.5	120.2	+73
Public Housing	7.8	12.2	+1933
Private housing	130.7	164.7	—30
Commercial	31.9	37.8	—20
Industrial	44.4	55.0	—71
Unclassified	56.9	87.4	+45
U. S. Total	$461.8	$622.3	—20

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION (millions of dollars)

	Week of Jan. 5	Cum. 1 wk 1956	Cum. 1 wk % Chge '55–'56
Corporate securities	$0.4	$0.4	—94
State and municipal:			
All except housing	31.9	31.9	+59
Housing	...	...	—100
Federal loans	4.0	4.0	+111
Federal aid	...	...	...
Total nonfederal	$36.4	$36.4	+13
Federal appropriations:			
In U. S.	$...	$...	...
Outside U. S.	...	...	...
Total new capital	$36.4	$36.4	+13



ENR INDEXES (1913 = 100), 20-cities' average	1956 Jan. 5	% Change from last Month	% Change from last Year
Construction Cost	678.69	+0.8	+5.3
Building Cost	482.09	+0.7	+5.1

CONTRACTS AWARDED Millions of dollars	1955 Dec.	1955 12-Mos.	% Change from '54 Dec.	% Change from '54 12-Mos.
Total U. S., ENR reported	$1,693.1	$18,721.9	+23	+30
Private	921.3	11,672.1	+21	+43
Public	771.8	7,049.8	+26	+12
State & Municipal	666.7	5,415.0	+33	+ 8
Federal	105.1	1,634.8	− 8	+27
ENR Volume Index, 1913 = 100	544	600	+17	+25

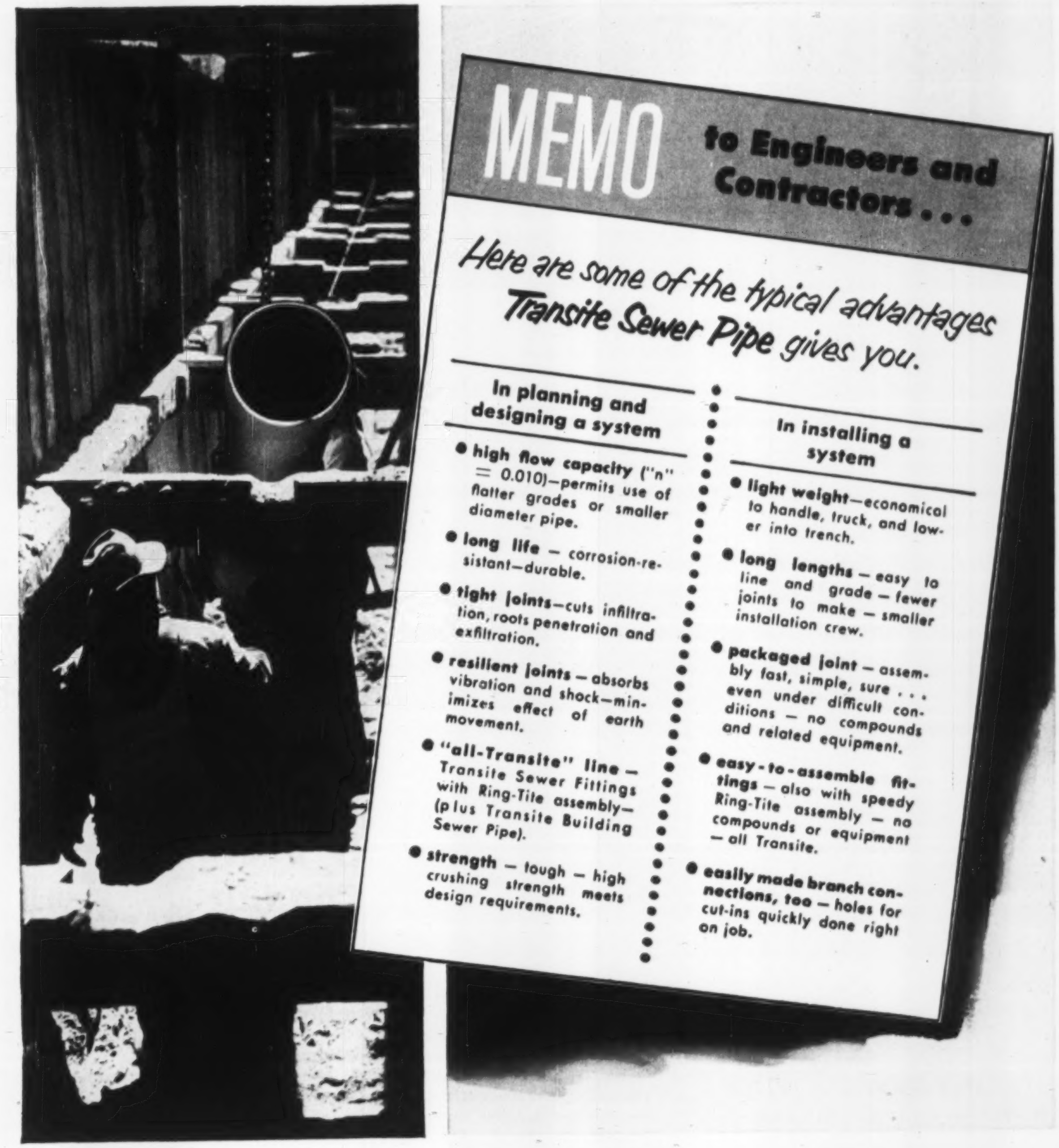
NEW CAPITAL FOR CONSTRUCTION Millions of dollars	1955 Dec.	1955 12-Mos.	% Change from '54 Dec.	% Change from '54 12-Mos.
Total U. S.	$801.3	$13,056.9	−12	+14
State & Municipal Bond Sales	527.6	5,008.0	−35	−16
Corporate Security Sales	267.7	3,602.8	+179	+39
Federal Loans, Aid (nonfed work)	6.0	981.8	− 2	−24
Federal Appropriations (fed work)	0.0	3,464.3	...	+64

MATERIALS SHIPMENTS Millions of units		1955 Sept. (S) Oct. (O) Nov. (N)	1955 Mos. (9) Mos. (10) Mos. (11)	% Change from '54 Mo.	% Change from '54 Yr.-Cum.
Portland Cement, Bu Mines	bbls	28.641(O)	254.017(10)	+ 6	+ 8
Port Cem Conc Paving Awards, PCA	sy	7.171(N)	84.550(11)	+41	+10
Fabricated Structural Steel	tons	.259(N)	2.734(11)	+13	− 6
Bookings, AISC	tons	.345(N)	3.328(11)	+77	+44
Reinforcing Bars, Net, AISI	tons	.202(O)	1.777(10)	+36	+20
Lumber, NLMA	ft bm	3,360(O)	33,740(10)	+ 1	+ 9
Orders	ft bm	3,411(S)	30,897(9)	+11	+11
Production	ft bm	3,431(O)	33,099(10)	+ 2	+ 6
Douglas Fir Plywood, DFPA, av/wk—					
Production	sf on $^{3}/_{8}$" basis	95.2(N)	94.1(11)	− 7	+29
Orders	sf on $^{3}/_{8}$" basis	88.5(N)	92.9(11)	− 2	+19
Clay Products, Bu Census—					
Brick, Unglazed, Common & Face		677.9(S)	5,313.2 (9)	+15	+17
Vit Clay Sewer Pipe	thous tons	187.9(S)	1,427.6 (9)	+19	+17
Struc Clay Tile, Ungl	thous tons	74.3(S)	636.8 (9)	− 4	− 6
Asphalt Products, Bu Census—					
Asphalt Roofing	sales squares	5.948(O)	55.608(10)	− 3	+ 9
Asphalt Siding	sales squares	.150(O)	1.091(10)	+ 6	−11
Aluminum, Wrought, Net, Bu Census—					
Plate Sheet & Strip	lb	134.8(S)	1,128.9 (9)	+33	+33
Roll Struc Shapes, Rod, Bar, Wire	lb	32.4(S)	273.8 (9)	+ 5	− 2
Extr Shapes, Tube Blms, Tubing	lb	67.5(S)	583.2 (9)	+53	+61

EMPLOYMENT & FAILURES

Contract Const Employ, BLS	thous	2,568(N)	2,513(11)*	− 1	− 1
Contractor Failures, Dun & Bradstreet					
Number		133(N)	1,268(11)	+21	+ 8
Liabilities	thous	9,744(N)	75,838(11)	+42	+49

* Average per month



MEMO to Engineers and Contractors . . .

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In planning and designing a system

- **high flow capacity** ("n" = 0.010)—permits use of flatter grades or smaller diameter pipe.
- **long life** — corrosion-resistant—durable.
- **tight joints**—cuts infiltration, roots penetration and exfiltration.
- **resilient joints** — absorbs vibration and shock—minimizes effect of earth movement.
- **"all-Transite" line** — Transite Sewer Fittings with Ring-Tite assembly—(plus Transite Building Sewer Pipe).
- **strength** — tough — high crushing strength meets design requirements.

In installing a system

- **light weight**—economical to handle, truck, and lower into trench.
- **long lengths** — easy to line and grade — fewer joints to make — smaller installation crew.
- **packaged joint** — assembly fast, simple, sure . . . even under difficult conditions — no compounds and related equipment.
- **easy-to-assemble fittings** — also with speedy Ring-Tite assembly — no compounds or equipment — all Transite.
- **easily made branch connections, too** — holes for cut-ins quickly done right on job.

Select TRANSITE® for more economical, tighter sewerage systems . . .

Whether a new sewerage system is being planned or additions to an existing one are being made . . . engineer and contractor alike will find a combination of qualities in performance-proved Transite Sewer Pipe that will fit their individual needs. They will find this holds true whether the local conditions call for (a) tight joints to protect against root growth and infiltration of ground water or (b) the strength and flow characteristics that mean definite savings in the design stage, during trenching and installation, and in operation as well.

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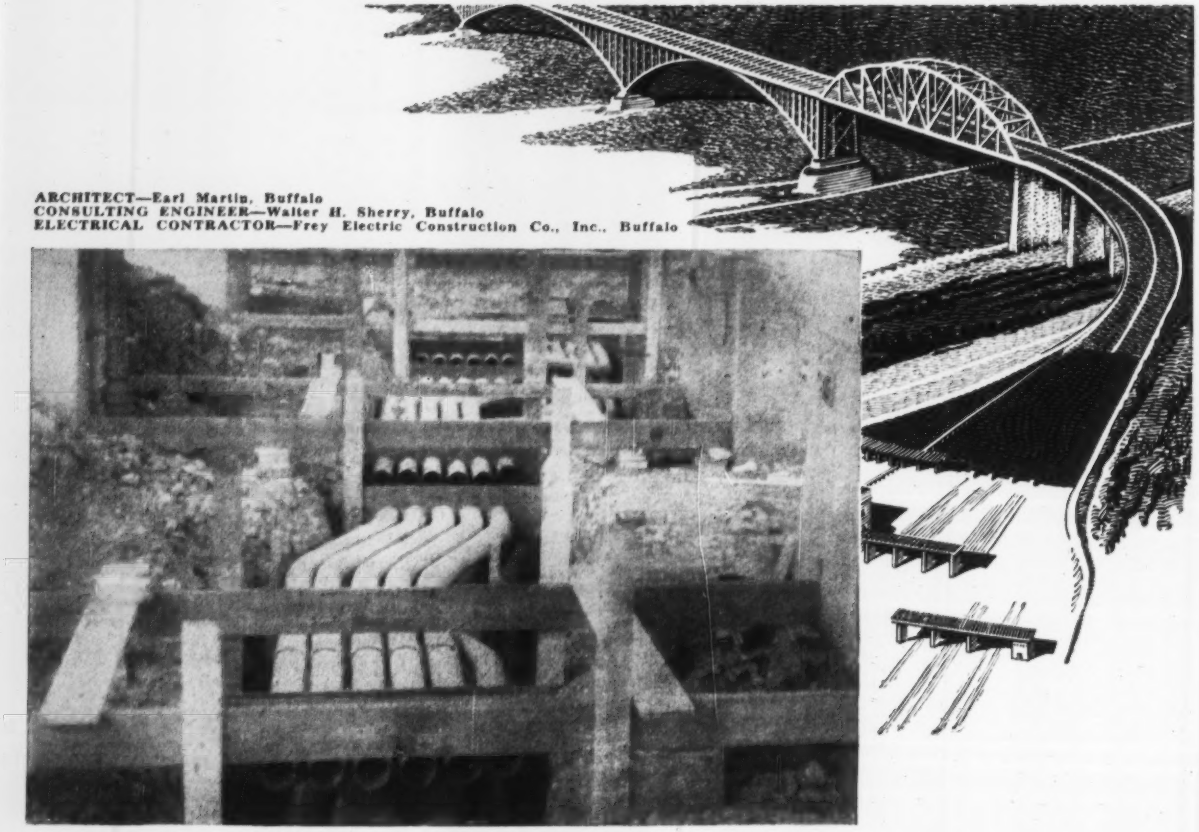
CONSULTING ENGINEER—Walter H. Sherry, Buffalo
ELECTRICAL CONTRACTOR—Frey Electric Construction Co., Inc., Buffalo



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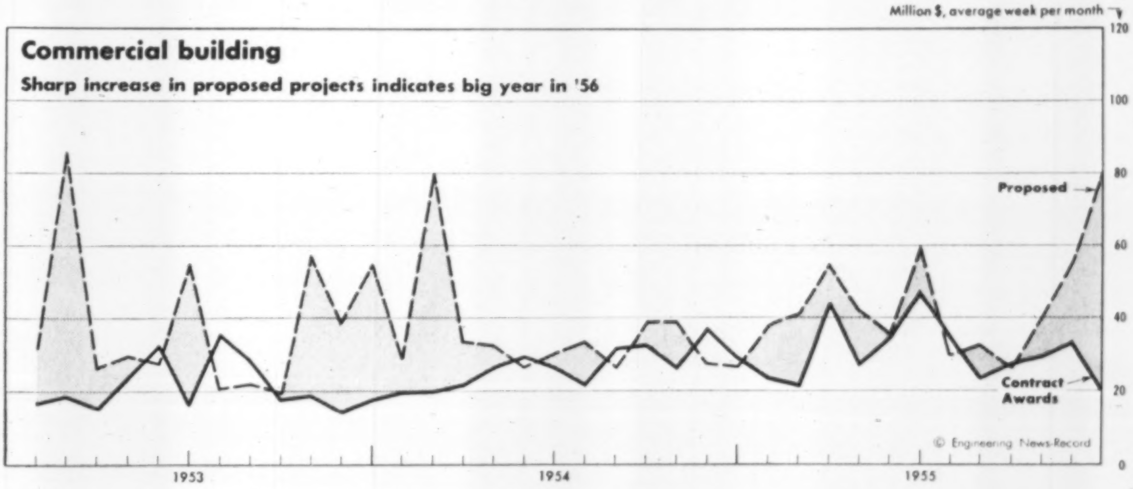

Commercial building

Sharp increase in proposed projects indicates big year in '56

Commercial Building Due for Upturn

Swift inflow of proposed projects builds up backlog; awards should start climbing in next three months

A heavy volume of proposed work is shaping up a new boom for commercial building. Many of these proposed projects should reach the contract stage within the next few months. It adds up to another good year for commercial building.

Last year's awards of $1,655.5 million chalked up a new record, 17% above 1954. But the year was mixed. If the first half was an express, the second half was a milk train.

By the end of June, commercial contracts were booming along 46% ahead of the comparable '54 period. In the last six months, contract awards for commercial building trailed the same period in '54 by 6%. Now a new surge is expected.

December's proposed commercial building scored $402 million, a new high for any month on record, and 202% above December, '54. At $2.4 billion, the 1955 total of proposed commercial building is 14% ahead of the big buildup that set in motion the 1954-55 climb in contract awards.

• **Some areas booming**—A boom in commercial contracts is clipping along in the area from Ohio to the Pacific Coast. The Middle West, which early in '55 was running behind '54, picked up momentum and closed the year 40% ahead with a total of $430.9 million, second highest in the country.

The states west of the Mississippi held their own throughout '55. This region ranked third in volume of commercial contracts in '55 with $377 million, 25% above 1954. And, the Far West, with $133.3 million, ended the year 24% ahead of 1954.

Other regions lost ground in the second half of '55.

Decline in commercial contracts was biggest in the southern and eastern regions. While the Middle Atlantic States ranked first in total awards for '55 with $548 million, the margin of gain over '54 dropped drastically in the latter part of the year. At the end of the first five months of '55, contract awards for commercial building in the Middle Atlantic region ran 83% ahead of '54. When the figures were in for the whole year, the region was only 11% ahead of the preceding year.

New England ended the year 24% behind 1954 in commercial contracts and the South trailed '54 by 21%.

• **Credit curbs take toll**—One major factor in the overall decline in commercial building contract awards in the second half of '55 was a drop in the demand for shopping centers as a result of the mortgage credit restrictions which curtailed some big housing projects.

These shopping centers have been playing an important role in commercial building, along with office buildings, banks, hospitals and private schools.

Grants of the Ford Foundation to private schools, colleges and hospitals throughout the nation may be reflected in next year's commercial building totals. A sizeable portion of the $500 million in grants is expected to go for construction.

Commercial builders shopping for new work may find the new contracts in supermarkets. An estimated $800 million will be spent this year on construction of nearly 3,000 new supermarkets, according to an annual poll taken by the magazine Super Market Merchandising.

Each new supermarket will represent an average investment of at least $270,000. About $160,000 of this goes for brick and mortar. The rest is for fixtures and equipment.

Office building projects also will give a boost to commercial building. One of the biggest, announced in December, was the $75-million skyscraper and large parking garage to be built by Chase Manhattan Bank, in New York City.

Other big office building projects include a $40-million plan in Houston, Texas, for a 40-story structure and two related 20-story buildings for Ada Oil Co.; an $18-million, 41-story office building in New York City and a 22-story project in Cleveland, Ohio, valued at $17 million.

Three other office buildings, in the $12-million to $15-million bracket also have been proposed for the New York City area. And, a $17.5-million cooperative office building is slated for Chicago.

(B&F Continued on page 82)

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State and Municipal Bond Sales for Construction

Compiled by Construction Daily, in millions of dollars

Type of work	1953 (53 Wks)	1954 (52 Wks)	1955 (52 Wks)	% Chg. ('54-'55)
All construction	**$5,031.1**	**$5,931.5**	**$5,008.0**	**−16**
Buildings	**2,114.8**	**2,018.9**	**2,132.9**	**+6**
Schools	1,497.9	1,600.4	1,693.6	+6
Housing	283.1	112.4	102.2	−9
Other buildings	333.8	306.1	337.1	+10
Heavy construction	**2,916.3**	**3,912.6**	**2,875.1**	**−27**
Highways	1,393.5	1,740.0	1,260.9	−28
Bridges	346.5	309.8	106.3	−66
Sewerage	421.5	382.4	355.9	−7
Waterworks	326.9	376.2	366.3	−3
Earthwork, waterways	31.5	126.8	95.2	−25
Unclassified*	396.4	977.4	690.5	−29

* Includes electric and gas utilities, tunnels, recreational facilities.

"Municipals" Reach Second Best Year

State and municipal bond sales to finance construction totaled $5 billion in 1955, adding up to the second best year on record.

The total was down 16% from 1954. One reason was the absence of the big toll-road issues that characterized 1954. Another reason was a year-end congestion in the bond market.

As the year drew to a close, the financing pipeline became clogged with unsold issues. This prompted some states and municipalities to withdraw issues from proposed bond sales. One example was the mid-December withdrawal of $100 million in Connecticut Expressway bonds. More than a dozen smaller bond sales also were postponed in the month of December.

School bonds highlighted the 1955 state and municipal bond picture with a total of $1.7 billion reported—6% ahead of 1954's record.

A 10% increase was posted by public buildings other than schools or public housing. This "other building" category, which includes hospitals, libraries, city halls, state office buildings, police and fire stations, etc., accounted for $337.1 million in bond sales, for the best total in recent years.

But bond sales for some types of construction ran well behind 1954. Housing issues and all heavy construction bond sales dropped. Highway bonds, for example, ended the year with $1.3 billion distributed to investors—off 28% from the high 1954 volume. The curtailment would have been even sharper, but there was a substantial pickup in this category in the fourth quarter.

Earthwork and waterways issues also showed marked improvements in the final three months of '55, although the total for the year was 25% under 1954.

Canada Sets Sights on Record '56

Construction put-in-place in Canada, which set a record of $5.2 billion in '55, probably will post a new high in '56. That's the prediction of the 1,000-member Canadian Construction Association.

The 1955 total for work put-in-place was impressive, and 1956 should be even better. On a per-capita basis, Canada's construction spending probably will run well ahead of the United States. For '56, per capita construction spending in Canada is expected to average $335 as against $275 in the U.S.

One-third of the 1956 construction expenditures will be in housing, according to the Canadian contractor group. Another third will go for other types of building and the remaining third for heavy construction.

• **More eggs, more baskets**—Canada's long-time construction pattern, in which heavy construction dominated, was broken in '55, when heavy construction accounted for only 40% of the total work put-in-place. In '56, heavy construction probably will represent only a third of the total.

This change is one of the most significant developments in the Canadian construction situation in years. And, it is important to the rest of the

Canadian economy. As CCA President W. G. Malcolm observed:

"The fact that in the non-engineering fields alone (housing and buildings), the dollars value of construction is five times higher than in 1946 and is double in actual volume can mean only one thing. The construction industry has emerged as one of the most stabilizing influences in the overall Canadian economy."

Housing has carried the ball. In 1955, for the first time, the volume of dwelling units completed in one year hit the 125,000 mark—the target set by the industry several years ago as the desirable minimum annual level.

• **What makes a boom?**—All of the ingredients necessary for another boom year in construction seem to be on hand in Canada. There's a substantial demand for construction, which shows up in the steadily-growing backlog for highways and other public works; the general economic climate is favorable; ample financing is available and there is a larger-than-average carryover of work from '55 that will be completed in '56.

The only limiting factor for construction put-in-place might be a shortage of structural steel, according to Canadian contractors.

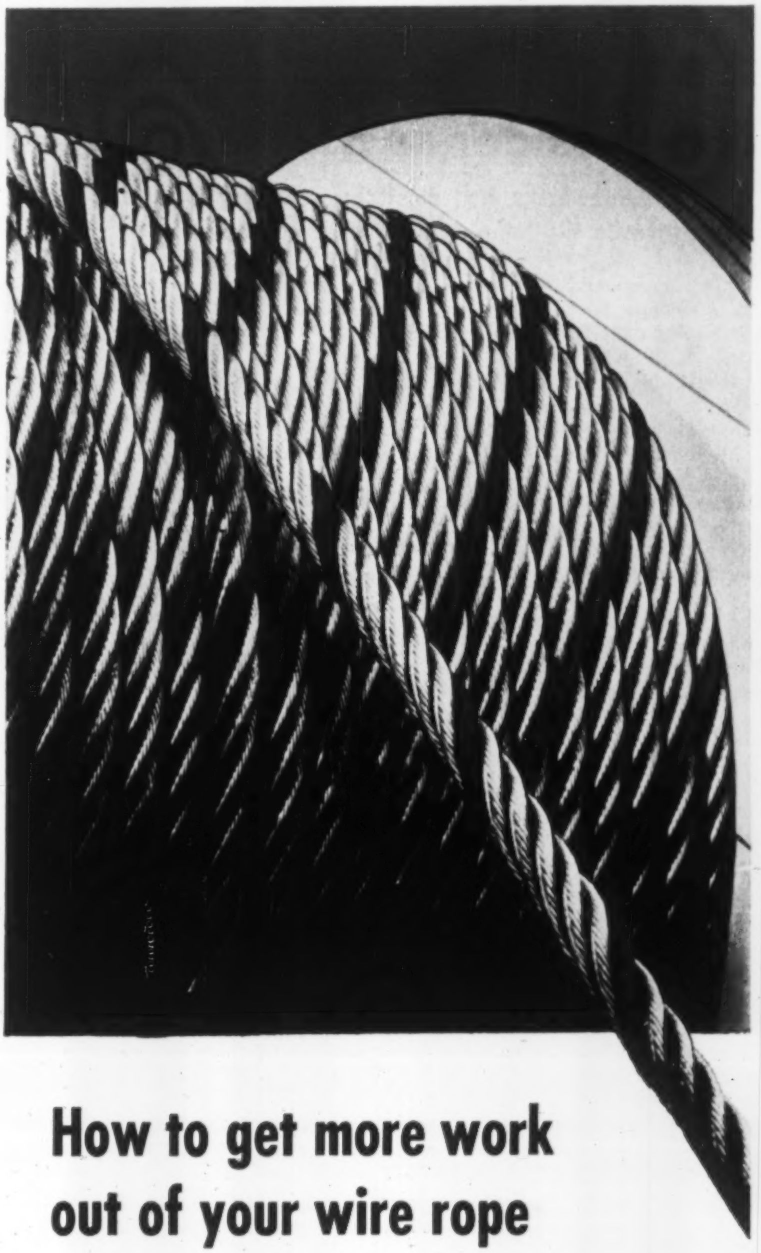
Business Briefs . . .

• **Aluminum price upped**—Canadian contractors and fabricators will pay 1¼ cents a pound more for primary aluminum ingot purchased from Aluminum Company of Canada.

• **More capacity**—On the U.S. side, the Aluminum Company of America is expanding capacity. Alcoa is adding 2,500 tons to its 95,000-ton capacity Vancouver, Wash., plant and 8,500 tons at Wenatchee, Wash.

• **Little FHA**—New York State may get a "little FHA" to provide a state guarantee of loans for the construction or rehabilitation of private middle-income housing. A bill to be introduced in the current legislature would make state funds available to builders who do not qualify for FHA loans to put up housing for families with $5,000 to $10,000 income.

• **Floods boost lumber price**—Flood-caused poor road conditions are slowing down shipments of Douglas fir lumber from northern California mills —and affecting the price. Last week, Douglas fir 2x4s were being quoted at $91 per Mftbm in the San Francisco Bay area.



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The President's Message

Eisenhower asks for clarification of eight-hour law and resubmits his labor recommendations made last year

The Eisenhower Administration's labor program for 1956, spelled out last week in the State of the Union Message, includes a new appeal for strengthening of the eight-hour law on jobs where federal money is involved.

In the message, which was read to Congress on Thursday, President Eisenhower devoted one sentence to that proposal, which was part of his 1955 program and which was bypassed although it was not hotly controversial:

". . . As requested last year, legislation should be passed to clarify and strengthen the eight-hour laws for the benefit of workers who are subject to federal wage standards on federal and federally-assisted construction and other public works."

The Administration's position crystallized in April 1955, when acting Comptroller General Frank H. Weitzel advised Defense Secretary Charles E. Wilson and Labor Secretary James Mitchell that the eight-hour statute does not require payment of overtime to workers who put in more than 40 hours per week on government construction contracts.

The test case arose in Arkansas, where contractors were employing their workers eight hours per day on a 7-day week—without payment of overtime. Weitzel held, in an opinion that is still controlling, that they need not pay overtime for the hours above 40 per week.

The labor section of President Eisenhower's speech contained no surprises and only two things that were new. These were:

- A pledge, in general terms, for federal aid to help areas of chronic unemployment solve their problems by attracting new industry. The President did not spell it out, but the Administration favors establishment of a $50-million loan fund to help depressed local areas, on a partnership basis, make surveys and plans aimed at luring new industry.

  The Senate labor subcommittee, under chairman Paul H. Douglas (D-Ill.), is already hard at work on a much more ambitious Democratic program that envisions $100 million in such loans, plus $100 million in outright grants that could be used for industry-promoting public works, such as road—and utility—building in industrial site developments.

- Administration-endorsement of legislation—yet to be proposed—that will force public disclosure of financial details of all employe welfare and pension funds. Eisenhower didn't say so, but presumably the Administration's stand will coincide with the Democratic view that disclosure should be made whether such funds are managed by unions or by companies.

Elsewhere, Eisenhower's 1956 references to labor were largely repeats from his 1955 State of the Union Message. He was stronger, but not more specific, in recommending that Congress broaden coverage of workers under the Minimum Wage Act. The issue is so politically hot and economically complex that neither the Administration nor Democrats in Congress are eager to take the lead in singling out new groups or classes of workers for coverage.

In the same doubtful category, insofar as action is concerned, are Eisenhower's renewed requests for liberalizing amendments to the Taft-Hartley Act. Without making any argument for them—or even spelling them out, for that matter—Eisenhower asked Congress once more to: (1) Require employers as well as labor unions to file non-communist affidavits with the National Labor Relations Board and (2) assure economic strikers the right to vote in an NLRB election to choose a bargaining agent.

West Coast Teamsters' Strike Is Ended

Settlement agreement, halting three months of idleness boosts wages and leaves bigger issues for arbitration

The long and costly teamsters' strike against members of the Southern California Rock Products Association came to an end just three months after it began.

Since the strike was called last Oct. 3 $700 million worth of construction has been stalled. According to current estimates, the bulk of this was work in process when the strike began and the balance represented a sharp drop in building permits issued during the strike.

The striking teamsters returned to work Jan. 3 following an agreement of Dec. 31 to submit all unresolved issues, including the controversial pension demand (ENR Nov. 3, 1955, p. 98), to an arbitrator mutually acceptable to both sides.

Under the settlement agreement, an immediate wage increase of 15 cents an hour is granted, plus an additional 2 cents in fringe benefits for liberalized shift premiums and additional paid vacation time (two weeks after three years instead of after five). The new wage boost will bring the average hourly wage in the industry to $2.35.

The issues to go to arbitration include, in addition to the pension dispute, length of contract, guaranteed work days, seniority and discharge changes, weekly pay days, new wage rates in certain classifications, and an additional paid holiday.

The decision to end the strike also carried with it an agreement by both sides to drop all litigation—the NRLB charges filed by both union and industry, and industry's $5-million damage suit filed in Federal Court. Although it is customary, according to legal counsel for the firms, for such cases to be allowed to die at the request of the parties involved, final decision in the matter rests with the NLRB and the court.

Prior to the settlement, the NLRB had climaxed two months of investigation into company charges of unfair labor practices by issuing a formal complaint against the union, alleging that the union demand that the rock firms join the Western Conference of Teamsters Pension Fund, constituted a violation of the Taft-Hartley Act. The NLRB examiner took the view that participation in the conference fund would require the firms "to relinquish their rights and duties to bargain concerning the establishment and administration of the pension fund and the bargaining issues inherent in it."

The return to work of more than 1,600 teamsters started immediate revival of much of Southern California's construction work. The 29 firms stated that over a million tons of rock aggregate materials were on hand for imme-

(*Continued on page 87*)

CUT WEEKS OFF PAVING SCHEDULES

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18
26
23
24
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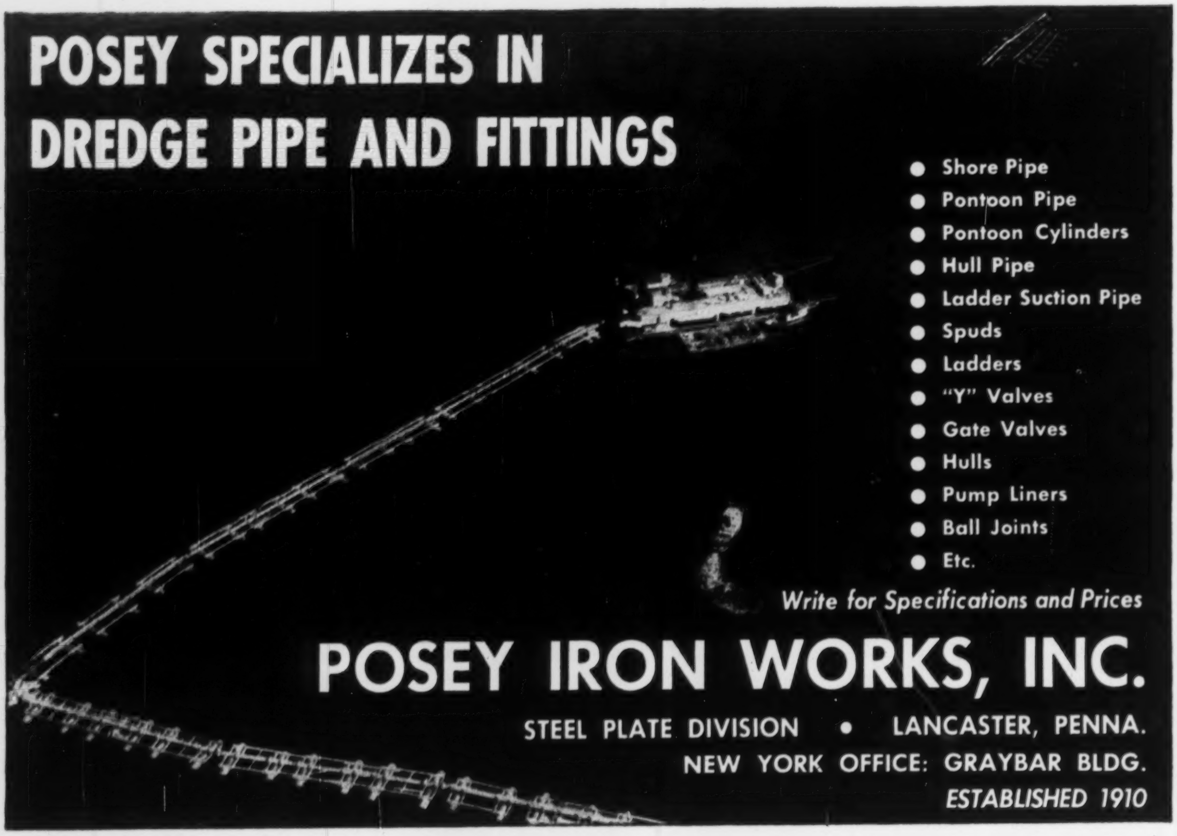

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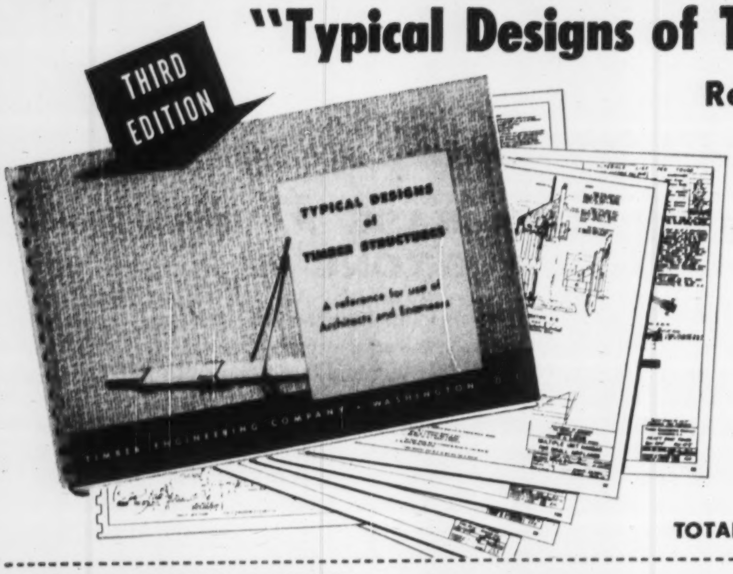
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diate shipment and that within a week the bulk of the teamsters, many of whom had been employed outside the industry, would be back on the job, bringing deliveries up to full schedule. According to the companies, the materials on hand were adequate to meet the needs of the construction industry during the initial stages of getting projects under way again, and that no allocation system appeared necessary.

The materials being delivered were initially going for projects postponed or held up by the strike, said a firm spokesman, such as schools, highways and flood-control projects. Many of the "emergency" projects had obtained materials prior to the settlement, and new orders were being taken with only "normal" delay in delivery anticipated.

Estimates varied on how long it would take the construction industry to recover from the strike. An AGC official predicted that it would take at least 60 days to bring delayed projects back on schedule and six months or more before the construction industry would be "entirely back to normal." He felt it would probably be at least a month before all contractors were getting deliveries.

Prices of materials remained stable, contrary to fears of many contractors, and no increases were expected according to the companies.

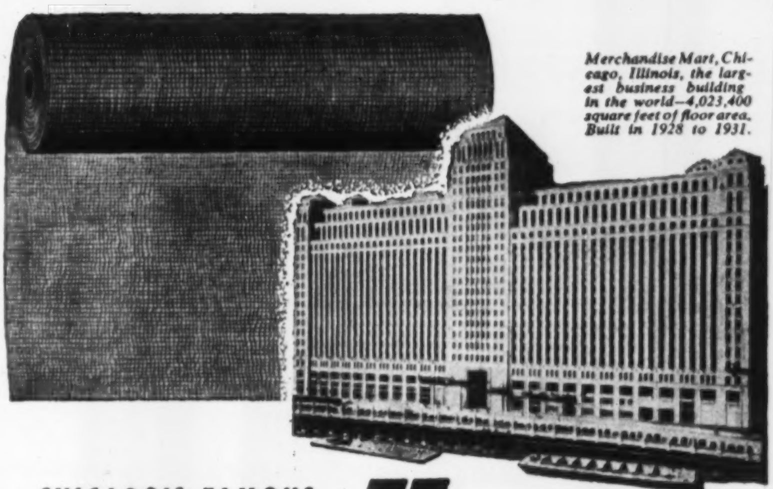
New Look in Jersey

Joint committee is formed to strengthen industry

The construction industry in New Jersey has launched a multi-purpose program, designed not only to improve labor-management relations but also to enable it to better discharge the industry's responsibilities to the general public. Its immediate goal is correction and elimination of a number of problems and practices that have long plagued the industry and driven new business to other states.

The first positive step occurred last week with formation of a 40-man joint committee equally representing the New Jersey State AFL-CIO Building and Construction Trades Council (headed by Sal Maso) and the Building Contractors Association of New Jersey (of which J. Albert Bugbee is president). With Paul Brienza, managing director of the contractor association, acting as secretary, the committee now faces the task of formulating a code of procedure to handle existing problems and to provide a medium through which matters of mutual concern and interest

(*Continued on page 88*)



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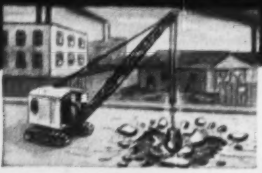

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can be presented, discussed and acted upon.

Spokesmen for the new group listed the major problems confronting the industry as work stoppages; bidding irregularities; featherbedding; trade jurisdiction demands over new methods and materials; health, safety and accident prevention programs; apprentice training; and the construction industry's vital role in civil defense.

In announcing the new program, Maso and Bugbee said the aims of the committee include these:

- To foster a labor-management relationship, based on the spirit of cooperation, that will function with harmony and stability.
- To promote fair and sincere treatment of labor by contractors and to achieve a high level of production on the part of the building trades unions.
- To make positive recommendations to contractors and unions for curing and correcting improper industry practices, after fair and open hearings on each group's problems.
- To keep faith with the mutual responsibility of labor and management to the general public.

Proper legislation will be requested when such is found necessary for successful solution of existing problems.

Under the plan, soon to be implemented by appointment of special subcommittees, sponsors of the program look forward to cutting down time and money all sides now lose in secondary boycotts, jurisdictional strikes, and industry malpractices. They also express the hope that labor and management can attract new developments to the state through such a program. To help them achieve their goals, Bugbee and Maso said they would "welcome complaints from all sources, including prospective builders and the general public."

Formation of the new committee, proposed several years ago by the previous managing director of the contractors' association and supported by Maso, comes at a time when the New Jersey building industry has just completed a record-breaking year with construction in 1955 exceeding $700 million.

Plumbers' Example

First area-wide contract, with accent on security, covers Greater New York

Members of the plumbing industry took another pioneering step in New York last week when labor and management signed an area-wide, uniform labor agreement, covering 10,000 journeymen plumbers in the five boroughs of New York City, Nassau and Suffolk Counties.

Claimed by the negotiators as the first of its type in the nation for the plumbers union, the new contract gives union members within its orbit the highest journeymen wage rate yet achived by the AFL-CIO United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry. And as another "first" in the construction industry, it provides for an "Additional Security Benefits Plan," through which a $2.00 a day per man contribution by employers will provide unemployment, retirement and death benefits.

The contract was negotiated by a joint committee of the 105-member Plumbing Contractors Association of the City of New York, Long Island and Westchester County, Inc., formed early last year for the purpose of bargaining on an area-wide basis, and five of the union's locals. The result of nearly a year of negotiations, the agreement, which is expected to set a pattern for members of the industry elsewhere, replaces the separate contracts previously held by the locals as they expire.

Effective last Thursday, the first of three 10-cent wage increases became effective; raising the basic rate for journeymen to $3.75 per hour. Effective dates of subsequent increases are July 5, 1956 and January 3, 1957. The existing 12% fringe benefit payments by employers, covering welfare, pensions, vacations and education, are retained. Holidays are reduced from 11 to seven. Full use of cutting and threading machines is permitted throughout the area. The contract expires June 30, 1957.

The new security provisions of the contract were explained by the negotiating committee as a recognition of the sporadic nature of construction employment and an attempt on the part of the plumbing industry to take care of its own men, rather than to increase the burden on public agencies. It's also an effort to reduce the rate of attrition which unemployment often causes in the ranks of craftsmen.

Funds accumulated under the security plan will be managed by the labor-management Joint Industry Board of each of the locals involved. Employer contributions will "follow the man" and will be credited to his individual account, wherever employed within the area.

Both management and labor look to the new agreement as an instru-

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ment that will help to stabilize the industry. A single contract and a uniform rate for the area, plus the absence of a wage-reopening clause, will ease the contractors' burden of estimating labor costs; and, along with the contract's other features, is expected to produce steadier employment and to increase production.

Outside Work Is Permitted For Civil Service Workers

State civil service engineers and architects in California may perform work in their professional fields for private interests outside of normal state duty hours.

The only exception, according to a ruling by Attorney General Edmund G. Brown, would be in connection with school construction or such other work as the employing state agency might deem incompatible with state employment.

Gov. Harriman Urges Change In Prevailing Wage Formula

In his annual message to the New York State Legislature, Gov. Averell Harriman urged that the state's prevailing wage law be amended to require inclusion of fringe benefits in wage determinations. This has long been an issue to which the AFL-CIO Building and Construction Trades Department has been particularly sensitive.

Noting that the law does not permit use of fringe benefits in determining prevailing wages, Harriman said the result is to give employers and contractors who do not provide such benefits a competitive advantage over those who do. He also indicated that unless these items are included, the law fails to fulfill its purpose of keeping wages on public works up to standards existing for similar work in the surrounding area.

Other recommendations, affecting both labor and management, included:

- Overhaul of the unemployment insurance law to raise the maximum weekly benefit from $36 to $40, to provide a maximum dependency allowance of $12 a week, to reduce the qualifying period from 20 to 15 weeks and to eliminate the law's present discrimination against small and seasonal employers.
- An increase in workmen's compensation benefits to reflect the increased cost of living and higher wage rates.

Western Pay Boosts

Laborers and teamsters sign 3-year contracts

Some 19,000 laborers and 800 teamsters in Washington and northern Idaho this month received the first of a series of raises granted under new three-year contracts with various chapters of the AGC.

In most instances, the total packages run to 35 cents.

• **Laborers**—Under the new contract between the Mountain-Pacific, Seattle, Tacoma and Eastern Washington chapters of AGC and the laborers union, wage increases vary—but hit at least 12 cents now with another 10 cents in each of the two succeeding years.

Some classifications (including powdermen, asphalt rakers, tendermen and powertool operators) will receive 17 cents in 1957, while laborers in eastern Washington will get 13 cents next year.

Travel allowances were boosted 50 cents in the two top zones (to $2.50 and $3.50) and an "up only" escalator clause, tied to the cost-of-living index, becomes effective in the event of a national emergency.

Laborers with members of the AGC Eastern Washington and Spokane Builders chapters receive increases of 12, 13 and 10 cents, the first of which became effective Jan. 1 under the new contract with the Eastern Washington District Council of Laborers. Part of the increase—10 cents in lieu of a health and welfare program—will be used to finance a welfare plan if one is later negotiated. It is on this point only that the contract can be reopened.

The wage boost lifts the present scale for Spokane laborers to $2.27.

• **Teamsters**—For teamsters on construction projects in eastern Washington and northern Idaho, the increase is 15 cents, effective Jan. 1, with 10 cents more on Jan. 1 of each of the next two years.

The contract, which cannot be reopened, contains a new travel clause, establishing a "free" zone within a 25-mi radius of the workers home. Allowance for the 25- to 40-mi zone is $1.00 for 1956, $1.50 for 1957 and $2.00 for 1958.

Varying rates remain in effect. For example, drivers of flatbed trucks previously got $2.20 an hour and now receive $2.35.

OFFICIAL PROPOSALS

Bids: January 24, 1956

Contract NYA-650.024

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
Boiler and Refrigeration Plant
Erection of Structural Steel

Sealed proposals for the erection of structural steel for the Boiler and Refrigeration Plant to be constructed at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P. M. on Tuesday, January 24, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, January 12, 1956

COMMONWEALTH OF MASSACHUSETTS. Department of Public Works. NOTICE TO CONTRACTORS: Sealed proposals for projects as listed below will be received at Room 427, 100 Nashua Street, Boston, Mass., until 2:00 P. M. on the date mentioned and at said place and time publicly opened and read. Charge for plans and specifications (amount returnable to bidders) and proposal guaranty, as shown.

	Plans & Specif.	Proposal Guaranty
1—ORANGE F 348 (1): Re loc. Rte. 2	$10.00	$23,000.
2—SUNDERLAND F 308 (5): Hwy. & Br. Constr. Rte. 116	15.00	19,000.
TUESDAY, JANUARY 31, 1956		
3—BOURNE-PLYMOUTH F 347 (1): Re loc. Rte. 3	30.00	87,000.
4—CHICOPEE-SPRINGFIELD: Hwy. Construction	15.00	12,500.
5—REVERE-IN 349 (2): Contract 5 N.E. Exp.	30.00	100,000.
6—RUSSELL: Hwy. Reconstruction Rte. 23	10.00	2,400.
TUESDAY, FEBRUARY 7, 1956		
7—DANVERS: Constr. Dist. Office Bldg.	50.00	13,000.
8—REVERE-IN 349 (1): Contract 4—N.E.Exp.	25.00	80,000.
9—WORCESTER: Hwy. Wk. at Washington Square	15.00	13,500.
TUESDAY, FEBRUARY 14, 1956		
10—BRAINTREE-QUINCY: Sec. 4-Hwy. Wk. S.E. Exp.	35.00	100,000.

Minimum wage and dump-truck rates have been established. Complete information at above address. Proposals available on or after following dates: Jan. 4th—No. 1 and 2; Jan. 5th—No. 3, 5, 7 and 8; Jan. 9th—No. 4; Jan. 10th—No. 6 and 9; Jan. 12th—No. 10. Plans on display at District offices. Right reserved to waive any informality in or reject any or all proposals. An award will not be made to a Contractor who is not equipped to undertake and complete the work.

By: JOHN A. VOLPE, Commissioner of Public Works.
December 31, 1955

Read the Official Proposal Columns of ENGINEERING NEWS-RECORD This Week and Every Week

OFFICIAL PROPOSALS

Bids: February 2, 1956

Wild Creek Gravity Water Supply System

Notice to Contractors
BETHLEHEM AUTHORITY
BETHLEHEM, PENNSYLVANIA
Penn Forest Dam and
Reservoir and Appurtenant Work
Contract No. 1

Sealed proposals addressed to Bethlehem Authority, 6 West Broad Street, Bethlehem, Pennsylvania for construction of Penn Forest Dam and Reservoir and Appurtenant Work in connection with the Wild Creek Gravity Water Supply System will be received at the office of Bethlehem Authority, 6 West Broad Street, until one o'clock P.M., Eastern Standard Time on the second day of February, 1956, at which time and place they will be publicly opened and read.

The work under this contract will consist of the construction of a dam and reservoir on Wild Creek approximately 2.4 miles upstream from the present dam and will include all clearing, grubbing and stripping; excavation; rolled embankment; rock embankment; concrete masonry for spillway and wasteway channels, cut-off walls, intake tower and valve chambers, stream control conduit, water supply pipe tunnel; slope paving; and other structures; drilling and grouting; rip rap; piping and valves; sluice gates; roadways and parking areas; stream relocation and all appurtenant operations and equipment.

Plans and Specifications, Form of Contract and Bidding Blanks are on file and open to public inspection at the office of Bethlehem Authority, 6 West Broad Street, Bethlehem, Pennsylvania, or at the office of Morris Knowles Incorporated, Engineers, 1312 Park Building, Pittsburgh, Pennsylvania. The plans and specifications may be obtained at either of said offices for use in preparing a bid, upon deposit of Fifty Dollars ($50.00) for each set. If the plans and specifications are returned in good condition within a period of two weeks after the date set for opening of Bids, the full amount of the deposit for one set will be refunded to each actual bidder. Other deposits will be refunded with a deduction of Twenty-Five Dollars ($25.00) for each set of plans and specifications to defray the actual cost of reproduction. If the plans and specifications are not returned within the time stated, the entire amount of the deposit will be forfeited

No bid may be withdrawn during a period of sixty (60) days after the scheduled closing time for receipt of bids.

The right to waive any informality in any bid; to accept any bid; or to reject any or all bids, is reserved by Bethlehem Authority, Bethlehem, Pennsylvania.

Each proposal shall be accompanied by a certified check, bank treasurer's check, or cashier's check, in an amount not less than ten per cent (10%) of the total of the bid submitted, in the form and subject to the conditions provided in the Information for Bidders. The bidder to whom a Contract is awarded will be required to furnish, for the faithful performance of the work thereunder, an approved Surety Company performance Bond in an amount equal to 100 per cent (100%) of the total of the of the bid submitted, and a separate approved Surety Company Labor and Materialmen's Bond in an amount equal to 50 per cent (50%) of the total of the bid submitted.

BETHLEHEM AUTHORITY
BETHLEHEM, PENNSYLVANIA
By: W. R. Coyle, Chairman
Robert L. Fox, Executive Director
and Chief Engineer
MORRIS KNOWLES INCORPORATED,
Engineers
January 5, 1956

Bids: January 26, 1956

Colonie, New York

ADVERTISEMENT—NOTICE TO CONTRACTORS
PROPOSED MAIN TO REINFORCE NORTH SECTION
OF
LATHAM WATER DISTRICT DISTRIBUTION SYSTEM

Sealed bids for furnishing and for the unloading, hauling and installing pipe for water mains to reinforce the water distribution system of the Latham Water District, Colonie, New York, will be received at the office of the Town Clerk, Harold R. McCabe, Town Hall on the 26th day of January, 1956, until 2:00 P. M. Eastern Standard Time, and then at said office, publicily opened and read aloud.

The work will consist of furnishing and unloading, hauling and installing about 2,343 feet of 24 inch diameter, long length, Class 200 Bell and Spigot cast iron pipe, about 8547 feet of 20 inch cast iron pipe, long length, Class 150 and 200, Bell and Spigot, about 9300 feet of 16 inch cast iron pipe, Bell and Spigot, Class 150 long length, about 5924 feet of 12 inch cast iron pipe, Classes 150 and 200, long length, Bell and Spigot, and about 350 feet of 8 inch cast iron pipe, Class 200, long length, Bell and Spigot, together with valves, the specials, and connections to existing mains.

The Information for Bidders, Form of Contract, Plans, Specifications and Form of Performance Bond may be examined at the office of Keis & Holroyd, Consulting Engineers, 257 Broadway, Troy, New York. Copies thereof may be obtained at the said office of the Town Clerk or Keis & Holroyd, upon payment of $25.00 for each set. Any bidder upon returning such set promptly in good condition, will be refunded his payment and any non-bidder upon so returning such set within 30 days of date for receiving bids, will be refunded $20.00.

The Town Board, Colonie, New York, reserves the right to waive any informalities in or to reject any or all bids.

A certified check made payable to the order of the Supervisior of the Town of Colonie, New York, in the amount of 5% of the bid must be deposited by each bidder with his bid as a guarantee that in case the contract is awarded to him, that he will, within 5 days thereafter, execute such contract and furnish a satisfactory performance bond. On failure to do so he shall forfit the deposit as liquidated damages, and acceptance of the bid will be contingent upon the fulfillment of this requirement by the Bidder.

The successful bidder will be required to furnish a performance bond satisfactory to the Town Board of Colonie, New York, in the amount of the contract and having as surety thereon such surety company or companies as are acceptable to the Town of Colonie, New York.

No bidder may withdraw his bid within 30 days after the date set for the opening thereof. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof.

HAROLD R. McCABE, Town Clerk
Dated: December 22, 1955
KEIS & HOLROYD
ENGINEERS
TROY, NEW YORK

Bids: February 14, 1956

City of Richmond, Virginia

NOTICE TO BIDDERS

City of Richmond, Virginia

Sealed proposals will be received at the office of the City Purchasing Agent, 4th floor, Mosque Building, Laurel and Main Streets, Richmond, Virginia, until but not later than 11 o'clock A. M., E.S.T., February 14, 1956, at which time they will be publicly opened and read aloud, for the following work which may be awarded in whole or in part:

Type of Work: The work to be done is part of the Sewage Disposal Project, is entitled "Division I—Grit Chamber and Sedimentation Tanks", and comprises the furnishing of all labor, materials, equipment and work incidental thereto for the construction of the Grit Chamber and Sedimentation Tanks, as shown, specified and directed.

Location: The Grit Chamber and Sedimentation Tanks will be located at the site of the Sewage Treatment Plant, adjacent to the southwest bank of the James River at Rockett's Wharf, northeast of the United States Naval Diesel School, in the City of Richmond, Virginia.

The proposal and other contract documents may be examined at the office of the Director of Public Works, 217 Governor Street, Richmond, Virginia and at the office of Greeley and Hansen, Engineers, 220 South State Street, Chicago 4, Illinois. Copies of the contract documents may be obtained from the office of the Director of Public Works, upon the deposit of Twenty-Five Dollars for each set. Any general contractor who submits a bonafide bid on the project will be refunded his payment in full for not more than three sets, and will be refunded Fifteen Dollars per set for each additional set. All others will be refunded, Fifteen Dollars per set upon the return of the documents in good condition within ten days after the opening of the bids.

Bids: January 24, 1956

Contract NYA-650.023

ADVERTISEMENT

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
BOILER AND REFRIGERATION PLANT
SALE OF STRUCTURAL STEEL

Sealed proposals for the furnishing, fabrication, storage and delivery of structural steel for the Boiler and Refrigeration Plant to be constructed at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P. M. on Tuesday, January 24, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, January 12, 1956

Prequalification Date: January 19, 1956

Board of Education Bureau of Construction

Notice Re Prequalification Forms for Contractors NOTICE IS HEREBY GIVEN THAT THE Director, of the Bureau of Construction, 4th Floor, 42-15 Crescent Street, Long Island City 1, New York, will receive applications for prequalification of bidders, from contractors who may wish to submit bids for the proposed herein after specified contracts, as follows: For playground development at Public School 202, Brooklyn, Hegeman & Atkin Aves., Linden Boulevard & Berriman Street. Prequalification application forms will have to be secured and must be submitted to the Director, Bureau of Construction Office, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York. Bids will be received from prequalified bidders only. The time for submitting prequalification application forms for the above contract will expire on Thursday, January 19, 1956. WILLIAM H. CORREALE, DIRECTOR. Dated: January 4, 1956.

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Excellent opportunity in Minnesota-Iowa territory of expanding company for engineer 28-35 years desiring sales, promotion and construction service work. Graduate preferred but experience may be substituted. Highway and concrete engineering background desirable for contacts with highway departments, contractors and concrete products companies.

Permanent position with excellent opportunity for advancement. Attractive salary, company car and expenses with liberal company sponsored benefits.

SW-8851, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Estimator — Fully qualified and experienced building estimator to locate in Texas, experienced in preparing estimates on large building projects. Position permanent with excellent opportunity and salary commensurate with ability. Please furnish experience record, training, salary desired, telephone number and address in first response. P-8555, Engineering News-Record.

Civil Engineers, Designers, Draftsmen experienced in the design of sewers, pumping stations, sewage treatment plants, water supply systems, structural and hydraulic design, hydraulic computations, specs. O'Brien & Gere, 400 E. Genesee St., Syracuse, N. Y.

Wanted: Bridge & Highway designers with office and field experience by consulting engineering firm in Pennsylvania. Give complete details and salary desired. P-8381, Engineering News-Record.

Wanted — Superintendent, Free to Travel, capable of estimating and constructing sewage disposal plants, sewerage interceptor systems, water filtration and distribution systems. State age, education and proposition desired. P-8745, Engineering News-Record.

Having opening for well qualified foreman and superintendent in Florida. Apply to P-8737, Engineering News-Record, giving complete background, references, salary desired, etc.

Superintendent wanted by concrete and asphalt paving contractor in Maryland—Virginia—D.C. area. Unusual opportunity. P-8735, Engineering News-Record.

Electrical Engineer: University Campus expansion requires permanent services for consultation, design and inspection of construction on complex electrical installations in buildings, underground utility service, and transformer stations. Degree or equivalent plus several years experience desired. University community attractive to family man. Write qualifications and salary requirements to Personnel Director, Indiana University, Bloomington, Indiana.

General Superintendent for expanding contractor specializing in underground utilities. Must be capable of assuming complete charge of all field activities covering Northern California. Management wants the top man in the West. Opportunity unlimited for cost conscious producer with engineering background. Give full details. Replies confidential. Write P-8813, Engineering News-Record.

MECHANICAL ENGINEER

To take on position of assistant to executive vice president of medium-sized manufacturing plant in Ohio. To effect liaison between executive and engineering departments concerned with process development and mechanization. Experience requirements could be secondary consideration for man with high degree of intelligence. Salary commensurate with ability and experience. Reply should include resume.

P-8852, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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Public Health Engineer I salary $4500 to $5160 per annum. Minimum requirements—graduation with a degree in sanitary, civil, chemical or mechanical engineering. Public Health Engineer II (for air pollution control work) salary $5160 to $6192 per annum. Minimum requirements—graduation with a degree in sanitary, civil, chemical or mechanical engineering, plus two years experience in public health engineering, industrial hygiene or air pollution control or combustion engineering. Persons desiring further information should write to the Personnel Department of the City of Philadelphia, Room 127 City Hall, Philadelphia 7, Pa.

Wanted — Architectural and Mechanical Draftsmen permanent positions for three architectural and one mechanical engineering draftsman to assist in College Building Program. Experience in architectural detailing desirable, but not required. Opportunity to further education, at either graduate or undergraduate levels in fine school of Engineering and Architecture. Salary commensurate with experience. Submit resume of experience, education, and desired starting salary to Vincent J. Cool, College Architect, Kansas State College, Manhattan, Kansas.

Wanted by General Contractor in Michigan. Young engineer for field layout work and some quantity take-off work in office. State age, experience desired. P-8811, Engineering News-Record.

Wanted Bridge Superintendent take complete charge of operations experienced in highway bridge construction—location mid-west area. Reply stating qualifications and salary desired. H. H. Mass Construction Company Algonquin, Illinois.

Wanted Construction Superintendent experienced in paving operations, State Highway Work in Illinois and Iowa. Ability to take complete charge. Reply stating qualification and salary desired. H. H. Mass Construction Company Algonquin, Illinois.

Draftsmen — Career opportunities available for two experienced structural steel or ornamental metal detailers and checkers. Desirable working and living conditions. Give full information as to experience and expected remuneration in reply. The J. T. Edwards Co. 1241 McKinley Avenue, Columbus, Ohio.

Building estimator for large, long established construction company located 20 miles outside Boston. Salary and position commensurate with ability. State full qualifications and references. P-8829, Engineering News-Record.

Asphalt Engineer: Must have knowledge of all phases of asphalt construction—Mid States area. P-8839, Engineering News-Record.

Materials Production Supt: Must have knowledge of machinery and production methods to produce all kind aggregates. Mid States area. P-8812, Engineering News-Record.

Superintendent for earth moving and rock excavation to be located in New York and neighboring states. Must be experienced with all phases of earth moving. Salary open. P-8845, Engineering News-Record.

EMPLOYMENT AGENCIES

Wanted Engineers, Designers, Draftsmen-Structural, Architectural, M.E., C.E., E.E. and Ind., also Teachers and Chemists. Cleveland Engineering Agency, 2132 E. 9, Cleveland.

POSITIONS WANTED

Heavy Duty Truck Driver Foreman, or Driver Semi, Dirt. Desire foreign work in heavy construction. 15 years overseas. 12 to 18 months contract. Good health, habit, employment record excellent. Phone 3-6905, Wire, write John English, 47 Ormond Avenue, West Asheville, N. C.

Salesman—41, with over 13 yrs. successful experience managing territories, including as District Manager, desires permanent position. Preferably in Mid-West or Mid-South where I am established. Best references. PW-8772, Engineering News-Record.

Construction Engineer available April 1st. 30 years experience. Ohio license. Prefer sewage or water plant construction. PW-8767, Engineering News-Record.

Inspector or Resident Engineer man qualified to handle all phases of highway express ways or air base construction. 25 years experience on the above. Grading, drainage concrete design & control, and asphalt paving and plant control. Foreign and domestic experience. Will go anywhere. PW-8763, Engineering News-Record.

Electrical Engineer: Thirty years experience with power company, consulting engineers, field installations, design, operation covering all phases of electrical work. Married. No children. Further information will be furnished on request. PW-8754, Engineering News-Record.

Construction Executive, buildings and heavy construction, sound experience bid to completion, qualified to manage a project, branch office or a business, seeks new connection where top man is required. Minimum $15,000. PW-8792, Engineering News-Record.

Civil-Structural Engineer. Age 30, married. registered several states. 8½ years varied experience. Design, teaching, specifications, construction supervision. Desires position with opportunity, interesting experience, or good pay. PW-8805, Engineering News-Record.

Available Foreman, drilling, blasting, operations excavation, placing concrete, thoroughly experienced. References. PW-8807, Engineering News-Record.

Civil Engineer, 24, BCE, married completing military obligation. Survey experience. Interested in construction management field. Florida preferred. Available: 1 April 1956. PW-8808, Engineering News-Record.

Estimator—Complete chemical plants 15 yrs top chemical firm married age 45 assume responsibility $10,000. PW-8809, Engineering News-Record.

Cofferdam, piling Supt. Age 35. Consider foreign assignment. Know men, methods, equipment and costs. Best of reference. PW-8830, Engineering News-Record.

Grad. C.E., Lic. P.E. in Va. Age 29 6 yrs. const. exper.—tunnel, filter plant, pump sta., power plant alterations, etc. Progressive responsibility—field & office experience—now supt.—desire change interested in responsible position PW-8814, Engineering News-Record.

Concrete Const. Eng'r., P.E., estimate, price, detail, design, field layout, supervision, inspection for f'd'ns., structures, finish. PW-8844, Engineering News-Record.

Superintendent, Bldg. construction, over 25 years of full responsibility on erection of commercial & industrial bldgs., hospitals, schools, churches etc. desires position of similar responsibility with reliable organization. Registered Engineer. PW-8849, Engineering News-Record.

Engineer, highway and other experience desires supervisory position will consider long term foreign employment, excellent Spanish. PW-8850, Engineering News-Record.

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P-8324, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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Applicant must have Professional Engineering license issued by the State of Connecticut or be eligible for said license in the State of Connecticut by June 1957. Salary is open. For details write to

WALTER A. BATES
Superintendent of Public Works, Darien, Conn.

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Planner III (Chief, Physical Planning Section). $6,220

Degree in planning, engineering, landscape architecture or design plus experience in comprehensive physical planning with a planning agency.

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Degree in planning, economics, sociology, political science or statistics plus experience in planning research and statistics with a planning agency.

Planner II (Assistant to Chief, Analytical and Statistical Planning Section). $5,270

Same requirement as for Section Chief, except that less experience is required.

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Degree in planning, engineering or landscape architecture desirable. Experience in land subdivision planning may be substituted for degree.

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P8761, Engineering News-Record
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P-8418, Engineering News-Record
330 W. 42nd Street, New York 36, N. Y.

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P-8825, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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P-8826, Engineering News-Record
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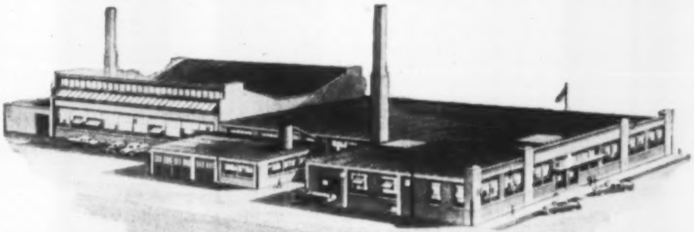

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FS-8762, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

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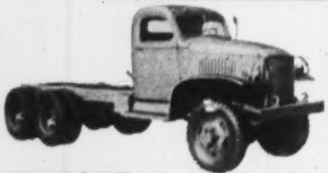

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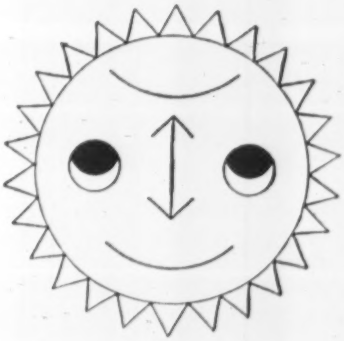

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Editorials

How Road Needs—and Costs—Grow

Striking evidence of how this country's road needs are growing at an unprecedented rate is found in a new study of Michigan's highway requirements just compiled by the Automotive Safety Foundation. This study supplements one made by the same agency in 1947, and shows that the cost of providing Michigan with an adequate highway system has gone up so fast that the current estimate for a 20-year improvement program is three and one-half times the estimate of only eight years ago.

Several factors have contributed to this large increase. Chief among them is the unprecedented rise in motor vehicle use. Also, higher standards have been used in some instances to meet the demands of the traffic load that now is anticipated. Finally, construction costs have risen sharply.

The significance of this finding extends far beyond Michigan because the same factors that have caused so spectacular an increase there apply in most if not all states. For the nation as a whole, it points to the high cost of the failure of Congress to inaugurate a greatly expanded highway building program.

Code Change Proposed

Members of the American Society of Civil Engineers are being asked to vote on a revision of the society's code of ethics. It is proposed to change clause 4, which now reads "It shall be considered unprofessional . . . to participate in competitive bidding on a price basis to secure a professional engagement", to read "to invite proposals for the performance of engineering service or to state a price in response to any such invitation when there are reasonable grounds for belief that price will be the prime consideration in selection of the engineer."

We hope the proposed change will be approved by the members. Possibly the wording could have been improved, but that is not significant. The significant fact about the proposed change is that it recognizes that price is a factor in competing for engineering engagements, but that the competition can be conducted ethically so long as price is not made the major consideration in selecting the engineer. The present code makes it appear that any competition involving price is unethical.

If this change in the ASCE code of ethics is approved, a question is raised that many feel the society should carefully consider. It relates to the fourteen members who were disciplined late in 1954 for participating in "competitive bidding on a price basis" for bridge work in South Carolina. Unless it can be shown beyond a shadow of doubt that price was to have been the major factor in selecting engineers for that work, should not the whole proceeding be wiped off the society's records? From several points of view, justice and equity appear to favor such a step, radical as it may seem to some.

Flood Control Deserves More Support

The Christmas week floods in California demonstrate with dramatic impact the effectiveness of flood control measures. Protected by Shasta and Folsom Dams, Sacramento remained dry. Fresno with the help of Friant and Pine Flat Dams also suffered no damage. Proposed dams could have provided similar protection to hard-hit towns. Had it been built, Oroville Dam on the Feather River, a structure planned to be higher than Hoover Dam and bigger than Grand Coulee Dam, would undoubtedly have saved many lives and millions of dollars in the Yuba City area. The same can be said of the proposed Narrows Dam on the Yuba River. Likewise, the authorized but unbuilt Terminus Dam on the Kaweah and Success Dam on the Tule would have prevented inundation of Visalia.

Dams, however, aren't the only flood protective devices. Levees built by the Corps of Engineers on the Pajaro River at Watsonville saved that coastal town from damage even though actual flow was substantially above design flow. Nearby an authorized but not financed levee project on the San Lorenzo River at Santa Cruz would have cut the damage there.

Construction of flood control and other water resource facilities has been proceeding at a good clip in California and other western states. The rate has probably been just about right in view of other demands on our national economy. But the trend the last couple of years was down. Now, in view of what has happened, public support should be forthcoming for reversing the trend.

Without question interest should be revived in the great but, so far, difficult-to-finance Feather River project to store the excess flood waters of that stream (largely behind Oroville Dam mentioned above) and deliver them through a long aqueduct to the thirsty areas of Southern California (ENR Mar. 10, 1955, p. 21). But more particularly, where local participation is required, such as at Santa Cruz, public support for flood control should be a certainty. As in the New England areas, which were hit last August, California communities are now aware of the need for local participation.

Probably, the most immediate need in the West is for a review of flood-control plans for all of the rivers that went over their banks in what appear at this time to have been floods of abnormal magnitude. More work on some of these projects has been authorized, but no funds have been appropriated. Doubtless all need a reappraisal as to their adequacy in the light of what has just happened. These are matters that should be taken up at once while interest is high in preventing a repetition of the December destruction.

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